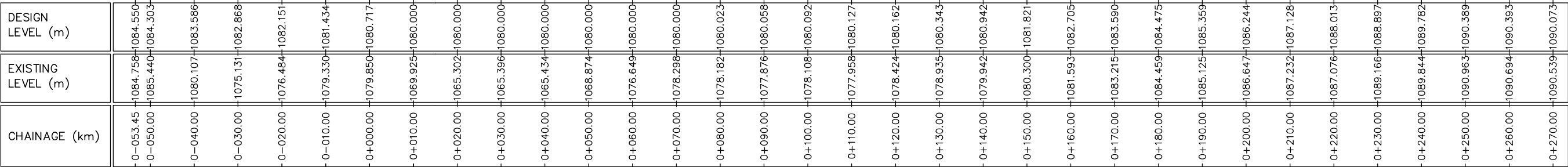


<p>DETAILED DESIGN</p> <p><u>PROJECT ROADS</u></p> <p><u>GENERAL</u></p> <p>LAYOUT</p>	
<p>PROJECT DRAWING</p>	<p>Q 1800</p>
<p>Drwg. No.: 31-00053-DD-4813</p>	<p>REV. —</p>






IP.No	CO-ORDINATES(m)		WCB (D-M-S)	DIST (m)	DEF. ANG (D-M-S)	TAN. LEN. (m)	SIMPLE CURVE DATA			CHAINAGE			
	EASTING	NORTHING					R (m)	E (m)	LC (m)	BC	MC	EC	IP
0	423229.562	3075725.500	224-32-42	0.000	00-00-00	0.000	0.000	0.000	0.000	0+000.00	0+000.00	0+000.00	0+000.00
1	423221.688	3075717.500	326-03-43	11.225	101-30-59	9.794	8.000	4.646	14.174	0+001.43	0+008.52	0+015.60	0+011.22
2	423211.594	3075732.500	56-20-12	18.080	90-16-30	8.039	8.000	3.341	12.605	0+015.85	0+022.15	0+028.45	0+023.89
2-1	423242.000	3075752.750	309-21-23	36.532	106-58-57	12.159	9.000	6.127	16.805	0+044.78	0+053.18	0+061.58	0+056.94
2-2	423231.153	3075761.646	00-00-00	14.028	00-00-00	0.000	0.000	0.000	0.000	0+063.45	0+063.45	0+063.45	0+063.45
2-3	423189.719	3075798.500	39-14-10	55.453	87-34-56	14.380	15.000	5.779	22.929	0+051.07	0+062.54	0+074.00	0+065.45
3	423303.844	3075938.250	28-02-40	180.429	11-11-23	7.837	80.000	0.383	15.624	0+232.21	0+240.02	0+247.83	0+240.05


1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).



Reference Drawings			Title	
Drwg. No.			PROJECT ROADS, GENERAL, LAYOUT	
31-00053-DD-4813-1800				
Revisions				
	Name	Date	Notes	



**TAMAKOSHI V HYDROELECTRIC PROJECT**  
**PROJECT DEVELOPMENT DEPARTMENT**  
**ENGINEERING SERVICES DIRECTORATE**  
**NEPAL ELECTRICITY AUTHORITY**

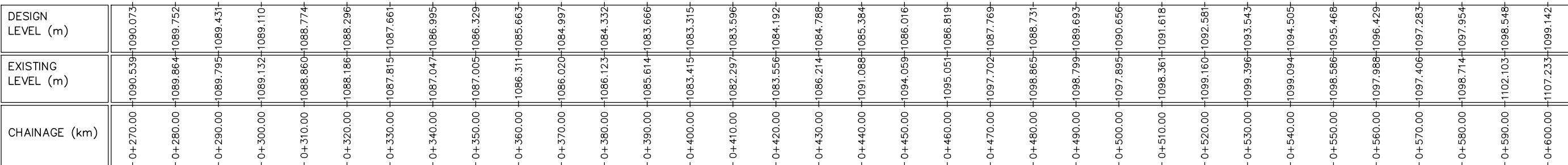
 <p><b>LAHMEYER INTERNATIONAL</b></p>	<p><b>CONSULTING ENGINEERS BAD VILBEL, GERMANY</b></p>
--	--

**TAMAKOSHI V HYDROELECTRIC PROJECT**  
**DETAILED ENGINEERING DESIGN**

	Name	Date	DETAILED DESIGN
Prepared	B. Khadka	23.10.17	<u>PROJECT ROADS</u>  <u>ROAD TO ADIT 2</u>  <b>LONGITUDINAL PROFILE</b>  SHEET 1 OF 3
Drawn	B. Khadka		
Checked	Roloff		
Approved	Dr. Moeller		
Replaces Drwg. No:			
... <b>CAD- File No.:</b>			PROJECT DRAWING
Scale A3: 1:1000			Drwg. No.: 31-00053-DD-4813- <b>Q 1802</b>

<b>REV.</b>	<b>—</b>
-------------	----------



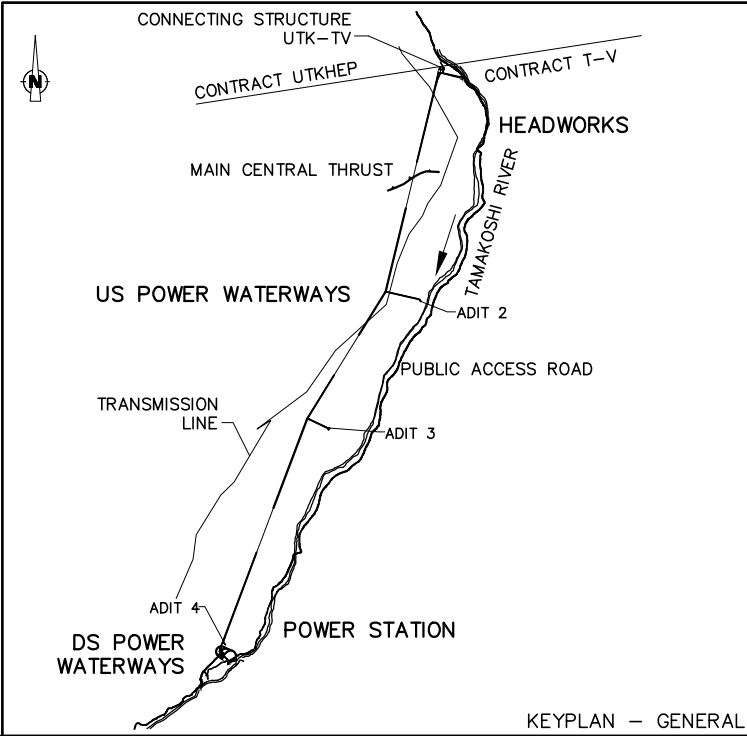


IP.No	CO-ORDINATES(m)		WCB (D-M-S)	DIST (m)	DEF. ANG (D-M-S)	TAN. LEN. (m)	SIMPLE CURVE DATA			CHAINAGE			
	EASTING	NORTHING					R (m)	E (m)	LC (m)	BC	MC	EC	IP
4	423346.594	3076018.500	21-57-39	90.926	06-05-05	3.189	60.000	0.085	6.372	0+327.73	0+330.92	0+334.10	0+330.92
5	423361.312	3076055.000	29-26-37	39.356	07-28-58	4.251	65.000	0.139	8.489	0+366.02	0+370.27	0+374.51	0+370.27
6	423383.750	3076094.750	312-17-17	45.646	77-09-16	11.965	15.000	4.187	20.199	0+403.94	0+414.04	0+424.14	0+415.90
7	423358.188	3076118.000	204-19-37	34.554	107-57-44	20.632	15.000	10.508	28.265	0+426.10	0+440.23	0+454.36	0+446.73
8	423322.812	3076039.750	211-42-08	85.875	07-22-26	4.189	65.000	0.135	8.366	0+515.42	0+519.61	0+523.79	0+519.61
9	423283.281	3075975.750	312-36-42	75.224	100-54-33	18.167	15.000	8.559	26.418	0+576.66	0+589.87	0+603.08	0+594.83

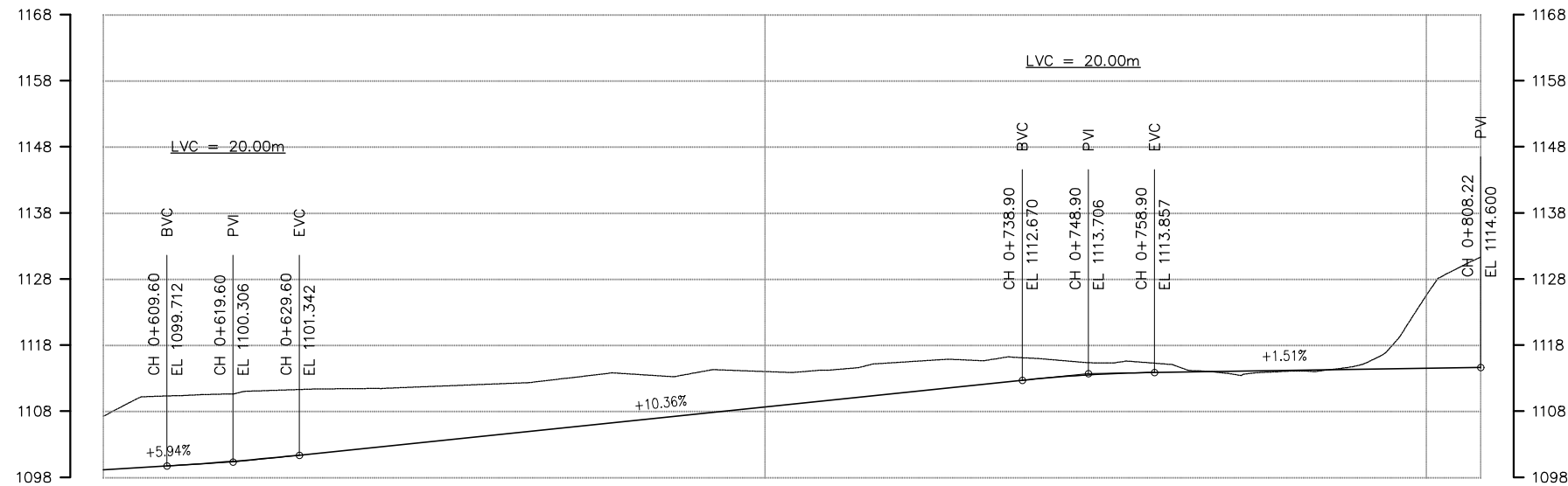


1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).

DRAFT STATUS:  
16.11.2018

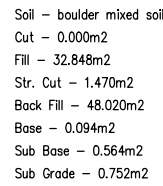
[illegible]



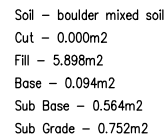


DESIGN LEVEL (m)	1099.142	1099.736	1100.449	1101.384	1102.420	1103.457	1104.493	1105.529	1106.566	1107.602	1108.638	1109.675	1110.711	1111.747	1112.781	1113.817	1114.853	1115.889	1116.925	1117.961	1118.997	1120.033	1121.069	1122.105	1123.141	1124.177	1125.213	1126.249	1127.285	1128.321	1129.357	1130.393	1131.429	1132.465	1133.501	1134.537	1135.573	1136.609	1137.645	1138.681	1139.717	1140.753	1141.789	1142.825	1143.861	1144.897	1145.933	1146.969	1148.005	1149.041	1150.077	1151.113	1152.149	1153.185	1154.221	1155.257	1156.293	1157.329	1158.365	1159.401	1160.437	1161.473	1162.509	1163.545	1164.581	1165.617	1166.653	1167.689	1168.725	1169.761	1170.797	1171.833	1172.869	1173.905	1174.941	1175.977	1177.013	1178.049	1179.085	1180.121	1181.157	1182.193	1183.229	1184.265	1185.301	1186.337	1187.373	1188.409	1189.445	1190.481	1191.517	1192.553	1193.589	1194.625	1195.661	1196.697	1197.733	1198.769	1199.805	1200.841	1201.877	1202.913	1203.949	1204.985	1206.021	1207.057	1208.093	1209.129	1210.165	1211.201	1212.237	1213.273	1214.309	1215.345	1216.381	1217.417	1218.453	1219.489	1220.525	1221.561	1222.597	1223.633	1224.669	1225.705	1226.741	1227.777	1228.813	1229.849	1230.885	1231.921	1232.957	1233.993	1235.029	1236.065	1237.101	1238.137	1239.173	1240.209	1241.245	1242.281	1243.317	1244.353	1245.389	1246.425	1247.461	1248.497	1249.533	1250.569	1251.605	1252.641	1253.677	1254.713	1255.749	1256.785	1257.821	1258.857	1259.893	1260.929	1261.965	1262.999	1264.035	1265.071	1266.107	1267.143	1268.179	1269.215	1270.251	1271.287	1272.323	1273.359	1274.395	1275.431	1276.467	1277.503	1278.539	1279.575	1280.611	1281.647	1282.683	1283.719	1284.755	1285.791	1286.827	1287.863	1288.899	1289.935	1290.971	1292.007	1293.043	1294.079	1295.115	1296.151	1297.187	1298.223	1299.259	1300.295	1301.331	1302.367	1303.403	1304.439	1305.475	1306.511	1307.547	1308.583	1309.619	1310.655	1311.691	1312.727	1313.763	1314.799	1315.835	1316.871	1317.907	1318.943	1319.979	1321.015	1322.051	1323.087	1324.123	1325.159	1326.195	1327.231	1328.267	1329.303	1330.339	1331.375	1332.411	1333.447	1334.483	1335.519	1336.555	1337.591	1338.627	1339.663	1340.699	1341.735	1342.771	1343.807	1344.843	1345.879	1346.915	1347.951	1348.987	1350.023	1351.059	1352.095	1353.131	1354.167	1355.203	1356.239	1357.275	1358.311	1359.347	1360.383	1361.419	1362.455	1363.491	1364.527	1365.563	1366.599	1367.635	1368.671	1369.707	1370.743	1371.779	1372.815	1373.851	1374.887	1375.923	1376.959	1377.995	1379.031	1380.067	1381.103	1382.139	1383.175	1384.211	1385.247	1386.283	1387.319	1388.355	1389.391	1390.427	1391.463	1392.499	1393.535	1394.571	1395.607	1396.643	1397.679	1398.715	1399.751	1400.787	1401.823	1402.859	1403.895	1404.931	1405.967	1407.003	1408.039	1409.075	1410.111	1411.147	1412.183	1413.219	1414.255	1415.291	1416.327	1417.363	1418.399	1419.435	1420.471	1421.507	1422.543	1423.579	1424.615	1425.651	1426.687	1427.723	1428.759	1429.795	1430.831	1431.867	1432.903	1433.939	1434.975	1436.011	1437.047	1438.083	1439.119	1440.155	1441.191	1442.227	1443.263	1444.299	1445.335	1446.371	1447.407	1448.443	1449.479	1450.515	1451.551	1452.587	1453.623	1454.659	1455.695	1456.731	1457.767	1458.803	1459.839	1460.875	1461.911	1462.947	1463.983	1465.019	1466.055	1467.091	1468.127	1469.163	1470.199	1471.235	1472.271	1473.307	1474.343	1475.379	1476.415	1477.451	1478.487	1479.523	1480.559	1481.595	1482.631	1483.667	1484.703	1485.739	1486.775	1487.811	1488.847	1489.883	1490.919	1491.955	1492.991	1494.027	1495.063	1496.099	1497.135	1498.171	1499.207	1500.243	1501.279	1502.315	1503.351	1504.387	1505.423	1506.459	1507.495	1508.531	1509.567	1510.603	1511.639	1512.675	1513.711	1514.747	1515.783	1516.819	1517.855	1518.891	1519.927	1520.963	1521.999	1523.035	1524.071	1525.107	1526.143	1527.179	1528.215	1529.251	1530.287	1531.323	1532.359	1533.395	1534.431	1535.467	1536.503	1537.539	1538.575	1539.611	1540.647	1541.683	1542.719	1543.755	1544.791	1545.827	1546.863	1547.899	1548.935	1549.971	1551.007	1552.043	1553.079	1554.115	1555.151	1556.187	1557.223	1558.259	1559.295	1560.331	1561.367	1562.403	1563.439	1564.475	1565.511	1566.547	1567.583	1568.619	1569.655	1570.691	1571.727	1572.763	1573.799	1574.835	1575.871	1576.907	1577.943	1578.979	1580.015	1581.051	1582.087	1583.123	1584.159	1585.195	1586.231	1587.267	1588.303	1589.339	1590.375	1591.411	1592.447	1593.483	1594.519	1595.555	1596.591	1597.627	1598.663	1599.699	1600.735	1601.771	1602.807	1603.843	1604.879	1605.915	1606.951	1607.987	1609.023	1610.059	1611.095	1612.131	1613.167	1614.203	1615.239	1616.275	1617.311	1618.347	1619.383	1620.419	1621.455	1622.491	1623.527	1624.563	1625.599	1626.635	1627.671	1628.707	1629.743	1630.779	1631.815	1632.851	1633.887	1634.923	1635.959	1636.995	1638.031	1639.067	1640.103	1641.139	1642.175	1643.211	1644.247	1645.283	1646.319	1647.355	1648.391	1649.427	1650.463	1651.499	1652.535	1653.571	1654.607	1655.643	1656.679	1657.715	1658.751	1659.787	1660.823	1661.859	1662.895	1663.931	1664.967	1666.003	1667.039	1668.075	1669.111	1670.147	1671.183	1672.219	1673.255	1674.291	1675.327	1676.363	1677.399	1678.435	1679.471	1680.507	1681.543	1682.579	1683.615	1684.651	1685.687	1686.723	1687.759	1688.795	1689.831	1690.867	1691.903	1692.939	1693.975	1695.011	1696.047	1697.083	1698.119	1699.155	1700.191	1701.227	1702.263	1703.299	1704.335	1705.371	1706.407	1707.443	1708.479	1709.515	1710.551	1711.587	1712.623	1713.659	1714.695	1715.731	1716.767	1717.803	1718.839	1719.875	1720.911	1721.947	1722.983	1724.019	1725.055	1726.091	1727.127	1728.163	1729.199	1730.235	1731.271	1732.307	1733.343	1734.379	1735.415	1736.451	1737.487	1738.523	1739.559	1740.595	1741.631	1742.667	1743.703	1744.739	1745.775	1746.811	1747.847	1748.883	1749.919	1750.955	1751.991	1753.027	1754.063	1755.099	1756.135	1757.171	1758.207	1759.243	1760.279	1761.315	1762.351	1763.387	1764.423	1765.459	1766.495	1767.531	1768.567	1769.603	1770.639	1771.675	1772.711	1773.747	1774.783	1775.819	1776.855	1777.891	1778.927	1779.963	1780.999	1782.035	1783.071	1784.107	1785.143	1786.179	1787.215	1788.251	1789.287	1790.323	1791.359	1792.395	1793.431	1794.467	1795.503	1796.539	1797.575	1798.611	1799.647	1800.683	1801.719	1802.755	1803.791	1804.827	1805.863	1806.899	1807.935	1808.971	1810.007	1811.043	1812.079	1813.115	1814.151	1815.187	1816.223	1817.259	1818.295	1819.331	1820.367	1821.403	1822.439	1823.475	1824.511	1825.547	1826.583	1827.619	1828.655	1829.691	1830.727	1831.763	1832.799	1833.835	1834.871	1835.907	1836.943	1837.979	1839.015	1840.051	1841.087	1842.123	1843.159	1844.195	1845.231	1846.267	1847.303	1848.339	1849.375	1850.411	1851.447	1852.483	1853.519	1854.555	1855.591	1856.627	1857.663	1858.699	1859.735	1860.771	1861.807	1862.843	1863.879	1864.915	1865.951	1866.987	1868.023	1869.059	1870.095	1871.131	1872.167	1873.203	1874.239	1875.275	1876.311	1877.347	1878.383	1879.419	1880.455	1881.491	1882.527	1883.563	1884.599	1885.635	1886.671	1887.707	1888.743	1889.779	1890.815	1891.851	1892.887	1893.923	1894.959	1895.995	1897.031	1898.067	1899.103	1900.139	1901.175	1902.211	1903.247	1904.283	1905.319	1906.355	1907.391	1908.427	1909.463	1910.499	1911.535	1912.571	1913.607	1914.643	1915.679	1916.715	1917.751	1918.787	1919.823	1920.859	1921.895	1922.931	1923.967	1924.999	1926.035	1927.071	1928.107	1929.143	1930.179	1931.215	1932.251	1933.287	1934.323	1935.359	1936.395	1937.431	1938.467	1939.503	1940.539	1941.575	1942.611	1943.647	1944.683	1945.719	1946.755	1947.791	1948.827	1949.863	1950.899	1951.935	1952.971	1954.007	1955.043	1956.079	1957.115	1958.151	1959.187	1960.223	1961.259	1962.295	1963.331	1964.367	1965.403	1966.439	1967.475	1968.511	1969.547	1970.583	1971.619	1972.655	1973.691	1974.727	1975.763	1976.799	1977.835	1978.871	1979.907	1980.943	1981.979	1983.015	1984.051	1985.087	1986.123	1987.159	1988.195	1989.231	1990.267	1991.303	1992.339	1993.375	1994.411	1995.447	1996.483	1997.519	1998.555	1999.591	2000.627	2001.663	2002.699	2003.735	2004.771	2005.807	2006.843	2007.879	2008.915	2009.951	2010.987	2012.023	2013.059	2014.095	2015.131	2016.167	2017.203	2018.239	2019.275	2020.311	2021.347	2022.383	2023.419	2024.455	2025.491	2026.527	2027.563	2028.599	2029.635	2030.671	2031.707	2032.743	2033.779	2034.815	2035.851	2036.887	2037.923	2038.959	2040.000	2041.040	2042.080	2043.120	2044.160	2045.200	2046.240	2047.280	2048.320	2049.360	2050.400	2051.440	2052.480	2053.520	2054.560	2055.600	2056.640	2057.680	2058.720	2059.760	2060.800	2061.840	2062.880	2063.920	2064.960	2066.000
------------------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------	----------

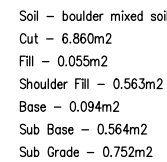
GL 1075.131 m  
DL 1082.868m



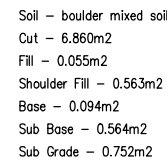
GL 1080.107 m  
DL 1083.586m



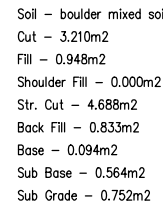
GL 1085.440 m  
DL 1084.303m



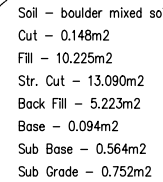
GL 1084.758 m  
DL 1084.550m



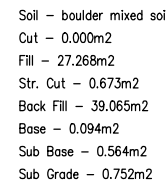
GL 1079.850 m  
DL 1080.717m



GL 1079.330 m  
DL 1081.434m

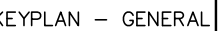
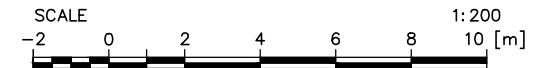


GL 1076.484 m  
DL 1082.151m




DRAFT STATUS:  
16.11.2018

1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).



Reference Drawings				
Drwg. No.			Title	
31-00053-DD-4813-1800			PROJECT ROADS, GENERAL, LAYOUT	
Revisions				
	Name	Date	Notes	




**TAMAKOSHI V HYDROELECTRIC PROJECT**

PROJECT DEVELOPMENT DEPARTMENT

ENGINEERING SERVICES DIRECTORATE

NEPAL ELECTRICITY AUTHORITY



**LAHMEYER  
INTERNATIONAL**

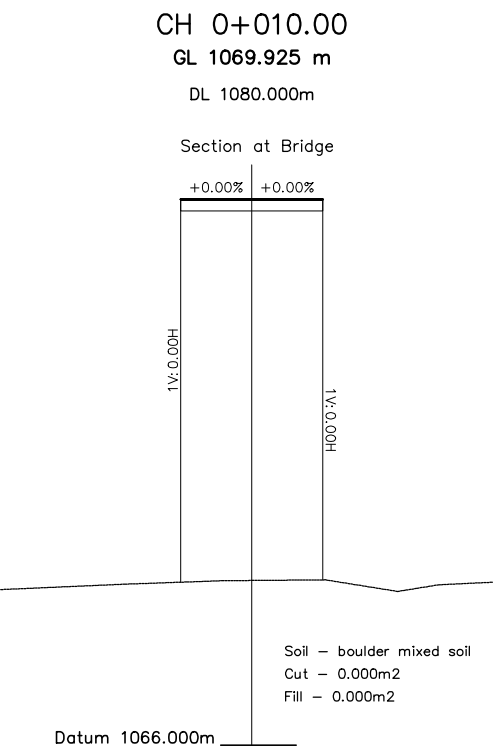
CONSULTING ENGINEERS  
BAD VILBEL, GERMANY

**TAMAKOSHI V HYDROELECTRIC PROJECT**

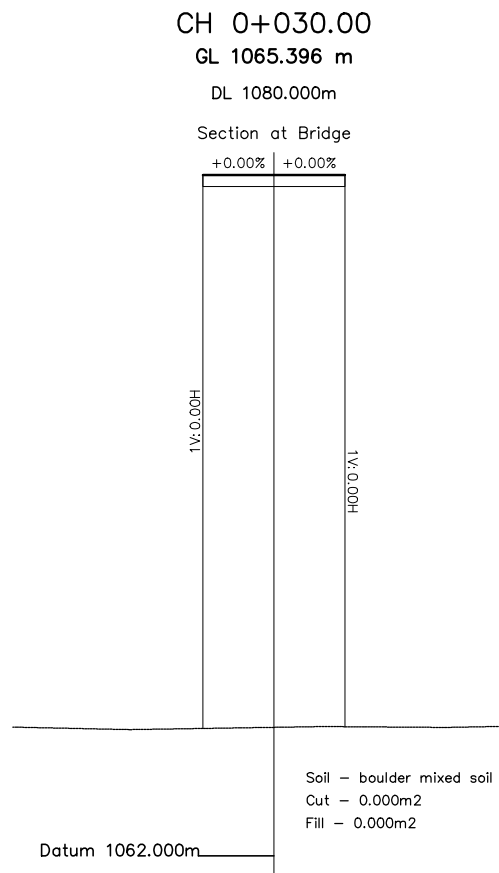
**DETAILED ENGINEERING DESIGN**

	Name	Date	DETAILED DESIGN <u>PROJECT ROADS</u> <u>ROAD TO ADIT 2</u> CROSS SECTION CH 0-053.45-0+000.00 SHEET 1 OF 11 PROJECT DRAWING
Prepared	B. Khadka	23.10.17	
Drawn	B. Khadka		
Checked	Roloff		
Approved	Dr. Moeller		
Replaces Drwg. No: ...			
CAD- File No.:			
Scale A3: 1:200			Drwg. No.: 31-00053-DD-4813- Q 1803
			REV. —

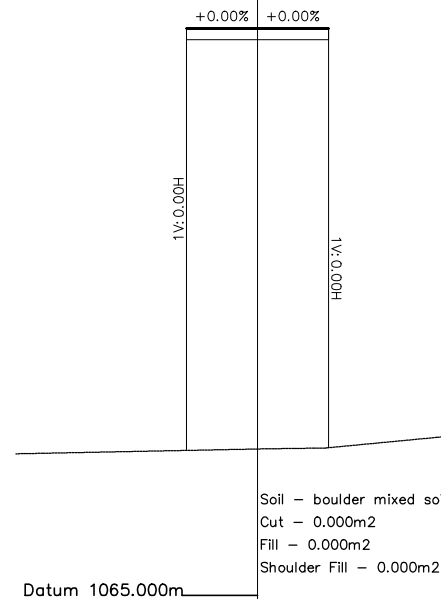
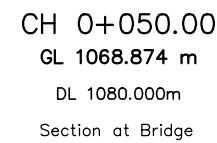
DL 1080.000m  
Section at Bridge



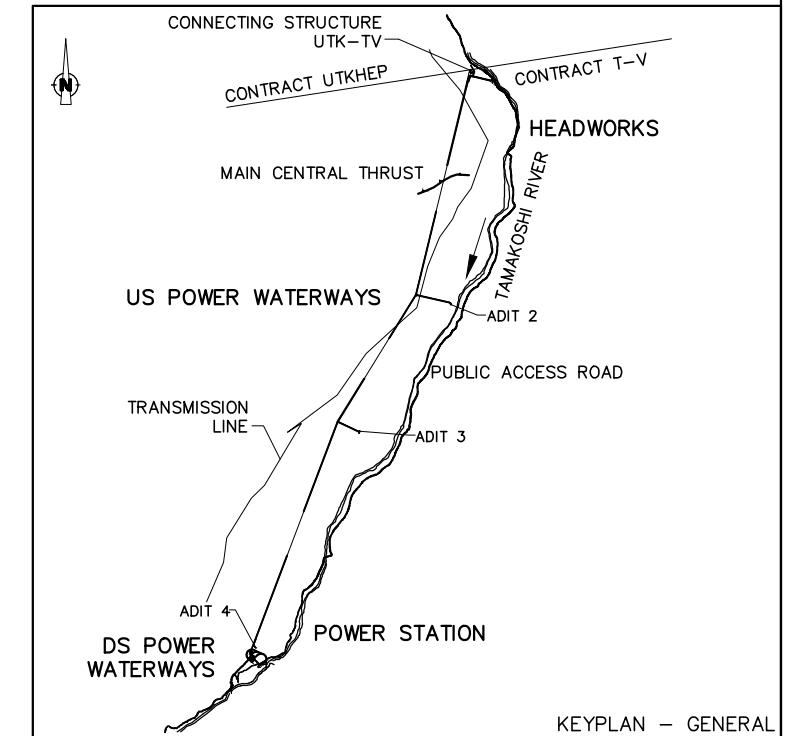
DL 1080.000m  
Section at Bridge



DL 1080.000m  
-7.00% | -7.00%



1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).



Reference Drawings	
Drwg. No.	Title
31-00053-DD-4813-1800	PROJECT ROADS, GENERAL, LAYOUT

Revisions			
	Name	Date	Notes



TAMAKOSHI V HYDROELECTRIC PROJECT  
PROJECT DEVELOPMENT DEPARTMENT  
ENGINEERING SERVICES DIRECTORATE  
NEPAL ELECTRICITY AUTHORITY

CONSULTING ENGINEERS  
BAD VILBEL, GERMANY

# TAMAKOSHI V HYDROELECTRIC PROJECT

## DETAILED ENGINEERING DESIGN

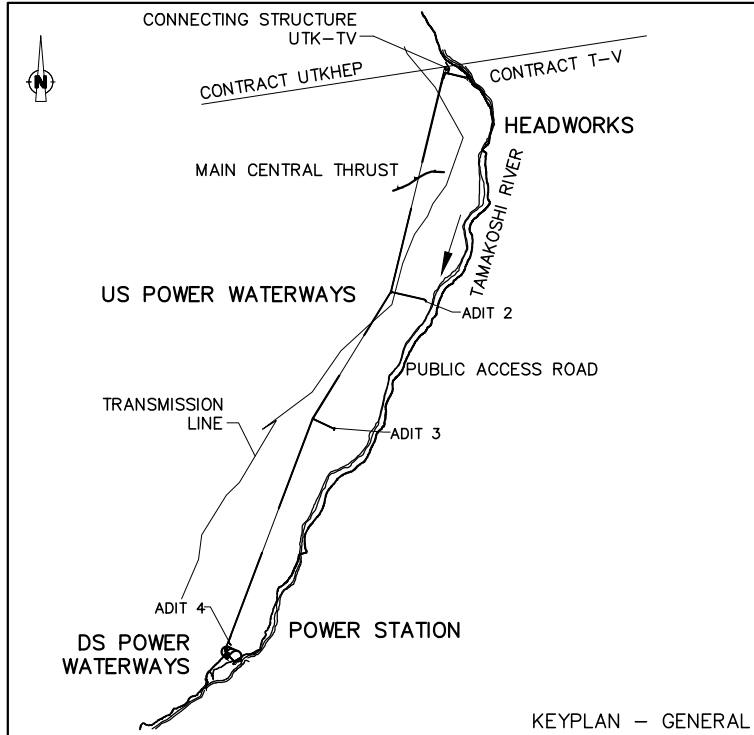
	Name	Date	DETAILED DESIGN		
Prepared	B. Khadka	23.10.17	<u>PROJECT ROADS</u> <u>ROAD TO ADIT 2</u> <u>CROSS SECTION</u> <u>CH 0+010.00-0+060.00</u> SHEET 2 OF 11 PROJECT DRAWING		
Drawn	B. Khadka				
Checked	Roloff				
Approved	Dr. Moeller				
Replaces Drawg. No: ...					
<u>CAD- File No.:</u>					
Scale A3:	1:200		Drawg. No.: 31-00053-DD-4813-	<b>Q 1803</b>	REV. —

DRAFT STATUS:  
16.11.2018




NOTES:


1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).



Reference Drawings				
Drwg. No.				Title
31-00053-DD-4813-1800				PROJECT ROADS, GENERAL, LAYOUT
Revisions				



TAMAKOSHI V HYDROELECTRIC PROJECT  
PROJECT DEVELOPMENT DEPARTMENT  
ENGINEERING SERVICES DIRECTORATE  
NEPAL ELECTRICITY AUTHORITY



LAHMEYER  
INTERNATIONAL

CONSULTING ENGINEERS  
BAD VILBEL, GERMANY

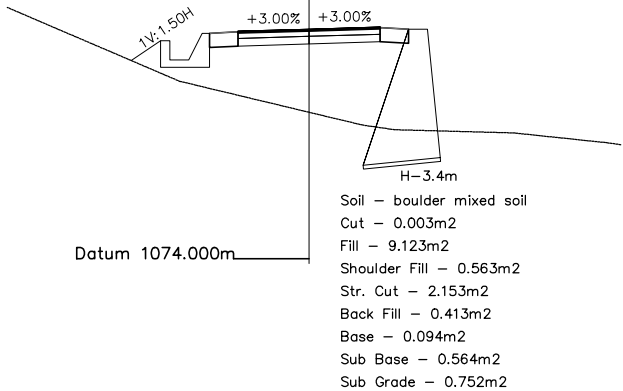
**TAMAKOSHI V HYDROELECTRIC PROJECT  
DETAILED ENGINEERING DESIGN**

	Name	Date	DETAILED DESIGN
Prepared	B. Khadka	23.10.17	PROJECT ROADS
Drawn	B. Khadka		ROAD TO ADIT 2
Checked	Roloff		CROSS SECTION
Approved	Dr. Moeller		CH 0+070.00-0+150.00
Replaces Drwg. No:			SHEET 3 OF 11
...			PROJECT DRAWING
CAD- File No.:			
Scale A3:	1:200	Drwg. No.: 31-00053-DD-4813- Q 1803	REV. -

DRAFT STATUS:  
16.11.2018

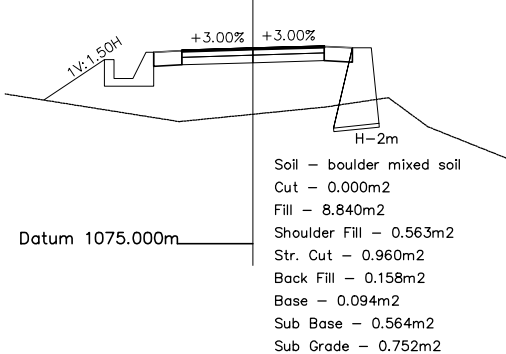
CH 0+090.00  
GL 1077.876 m

DL 1080.058m



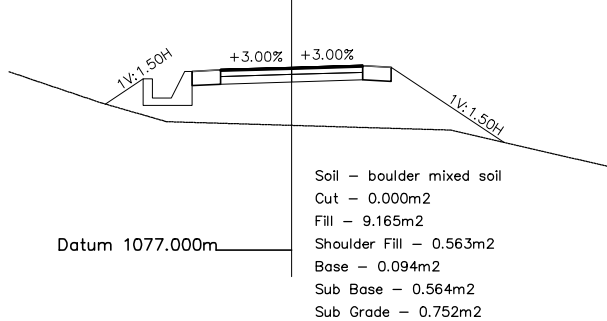
CH 0+120.00  
GL 1078.424 m

DL 1080.161m



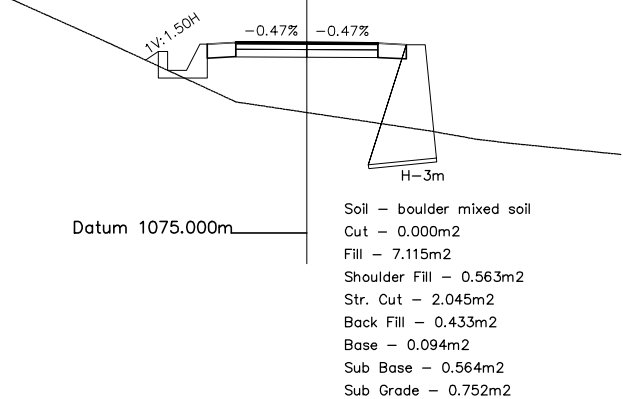
CH 0+150.00  
GL 1080.300 m

DL 1081.821m



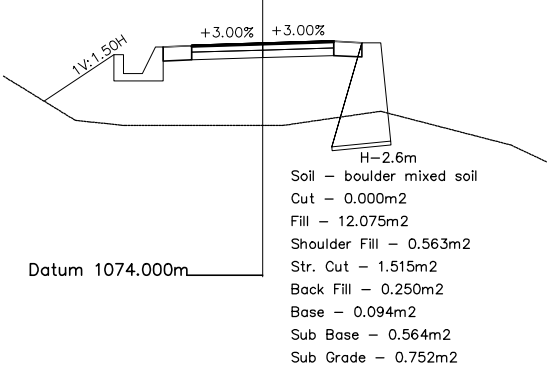
CH 0+080.00  
GL 1078.182 m

DL 1080.023m



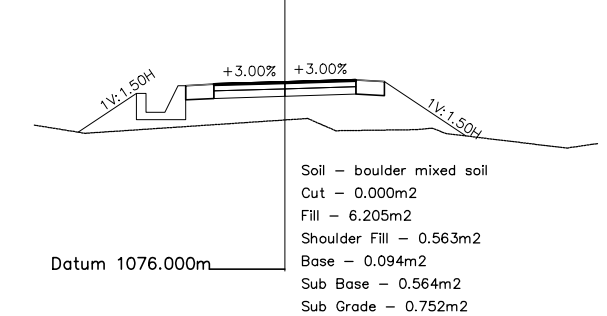
CH 0+110.00  
GL 1077.958 m

DL 1080.127m



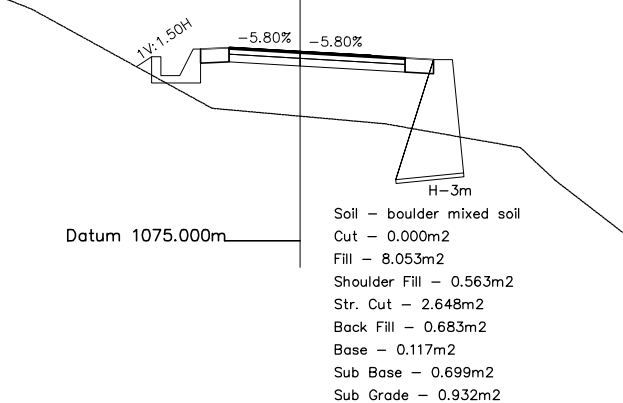
CH 0+140.00  
GL 1079.942 m

DL 1080.942m



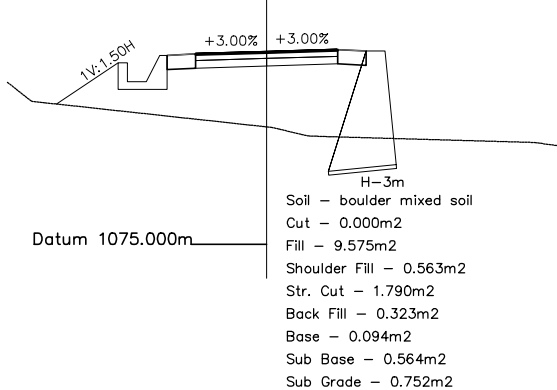
CH 0+070.00  
GL 1078.298 m

DL 1080.000m



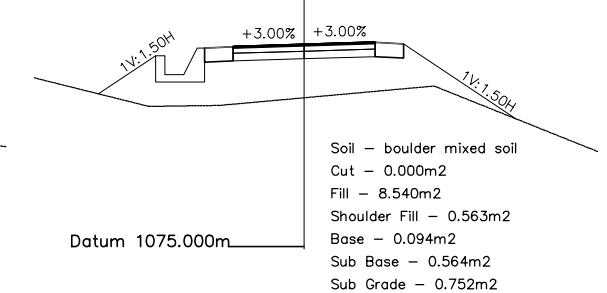
CH 0+100.00  
GL 1078.108 m

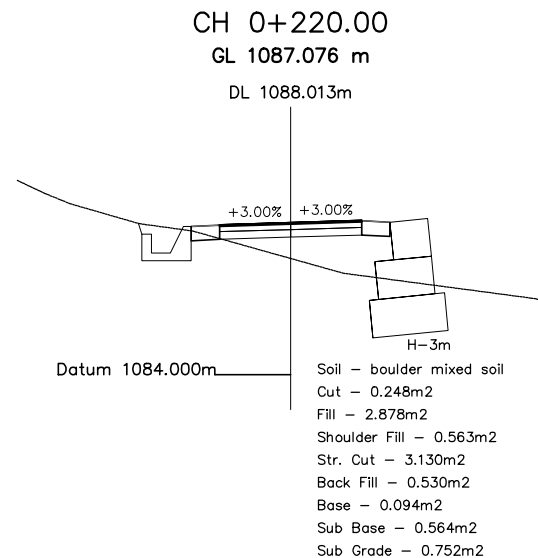
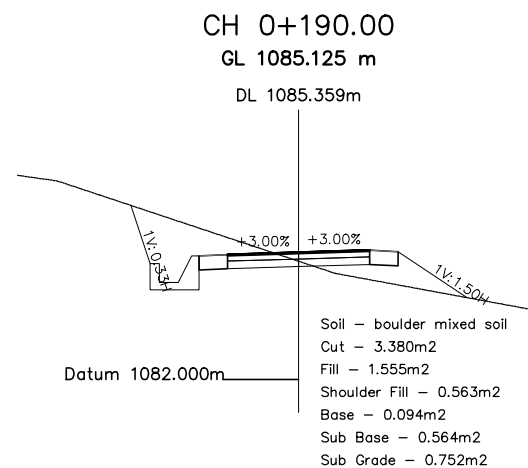
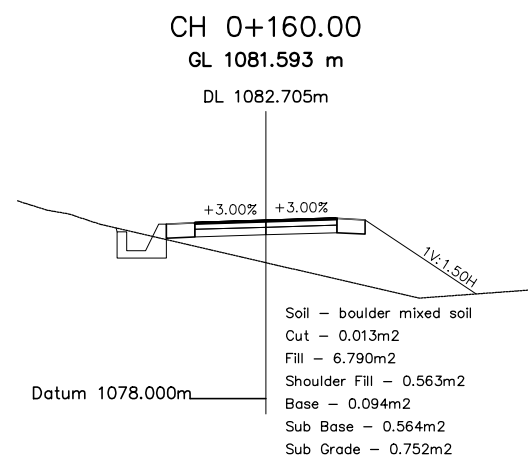
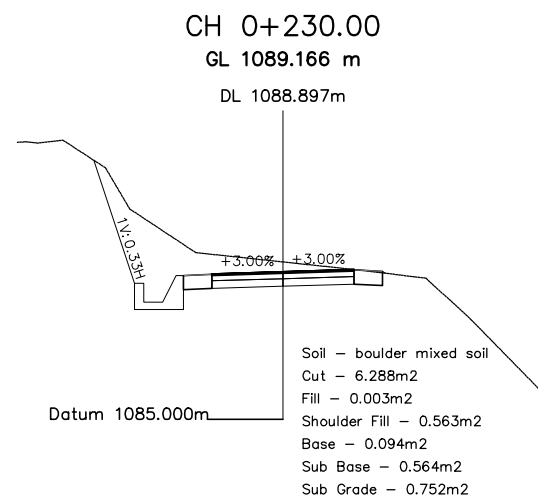
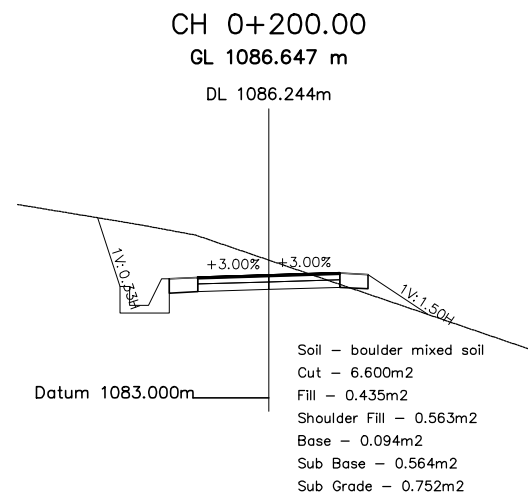
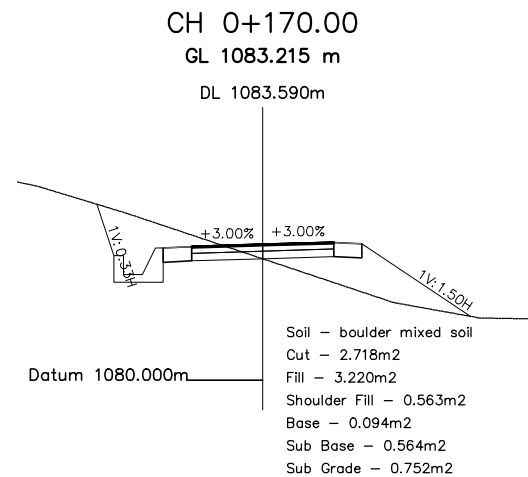
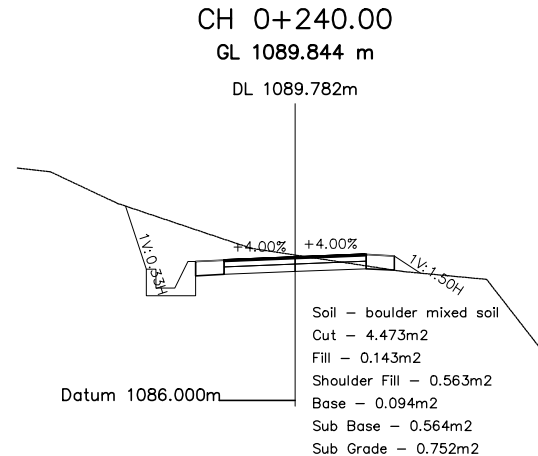
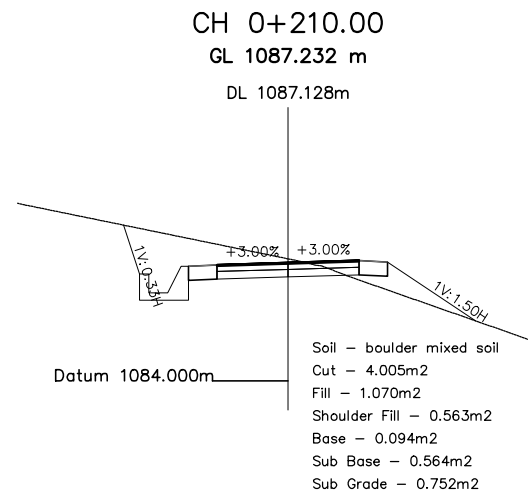
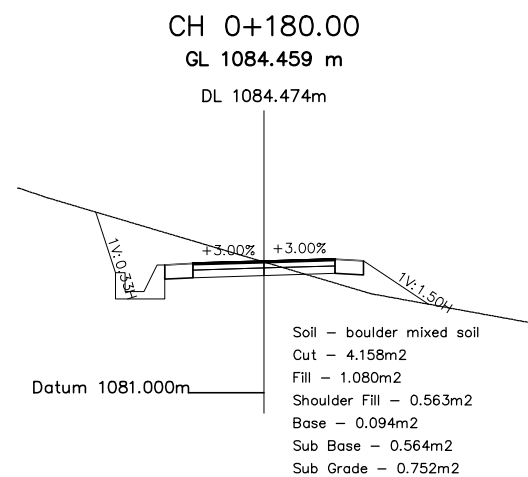
DL 1080.092m



CH 0+130.00  
GL 1078.935 m

DL 1080.343m

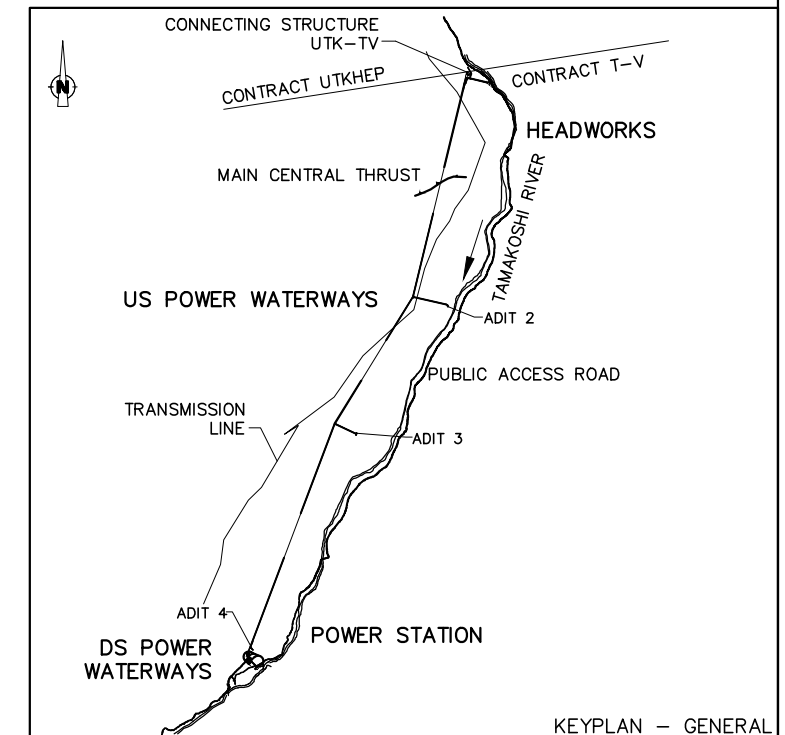
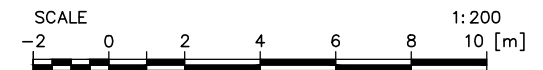






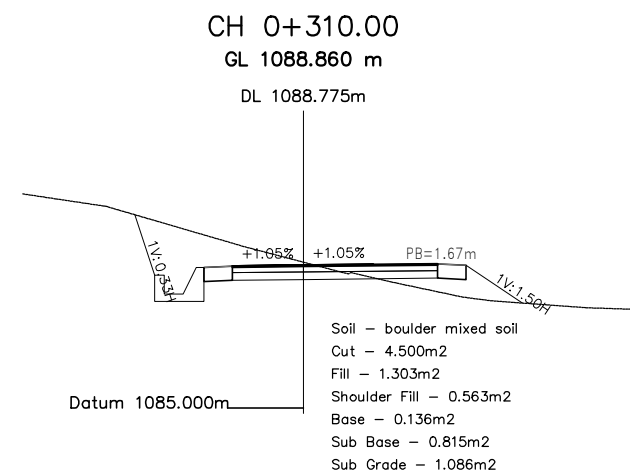
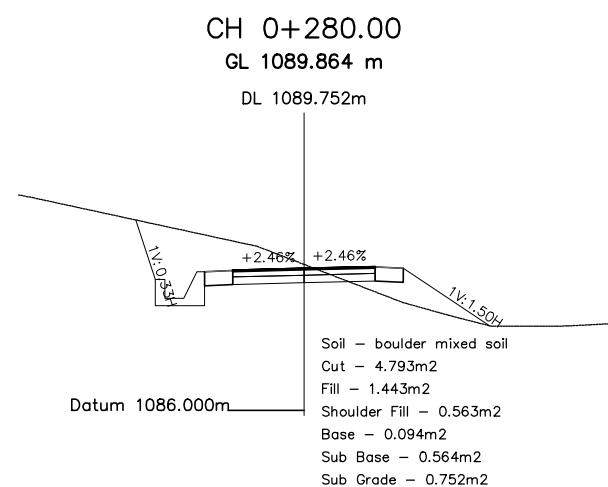
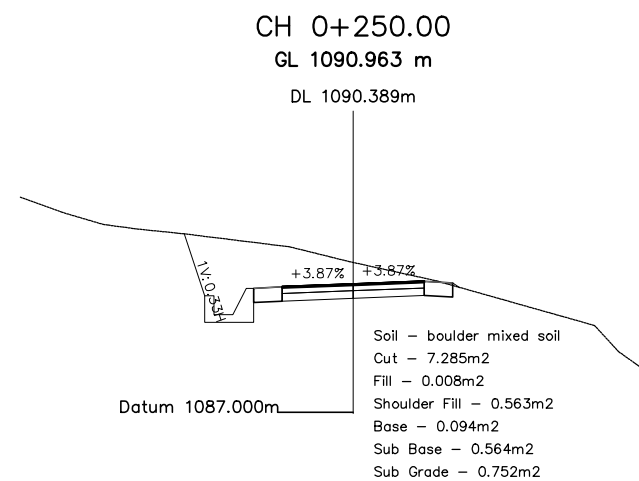
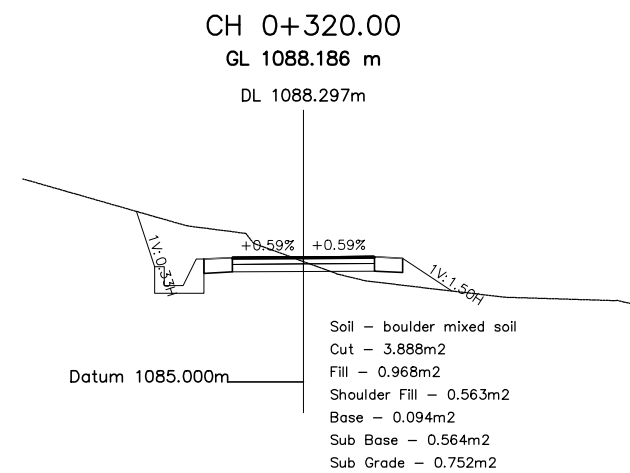
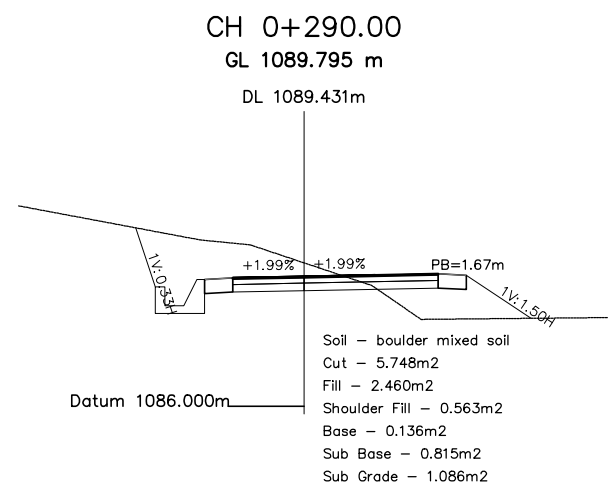
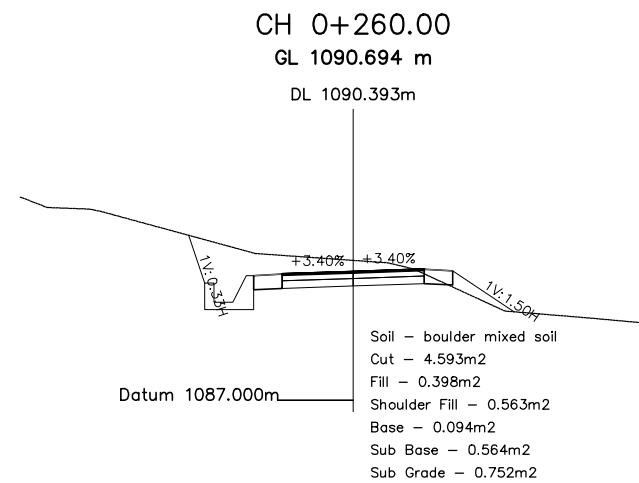
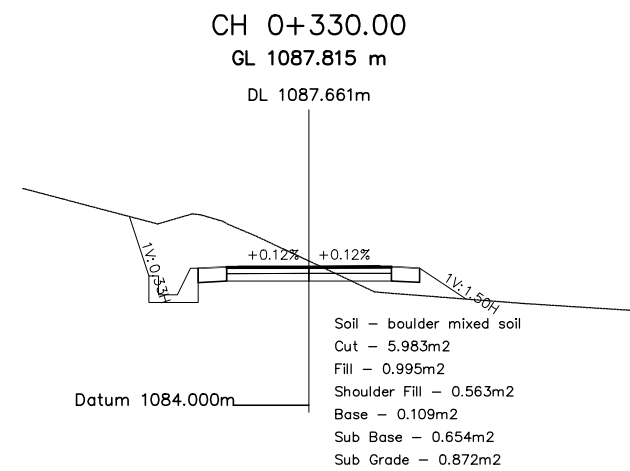
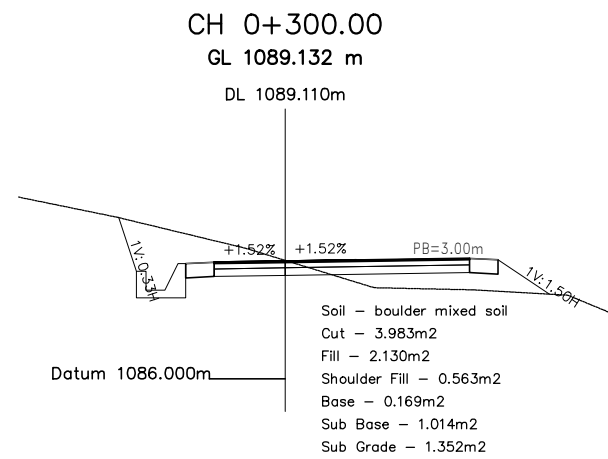
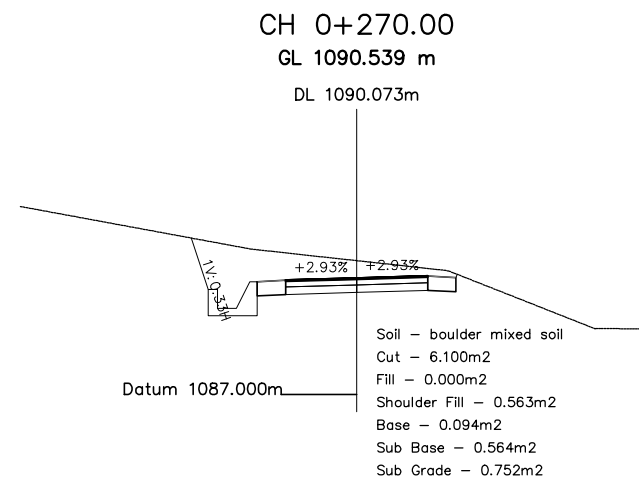
DRAFT STATUS:  
16.11.2018

#### NOTES:

1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).

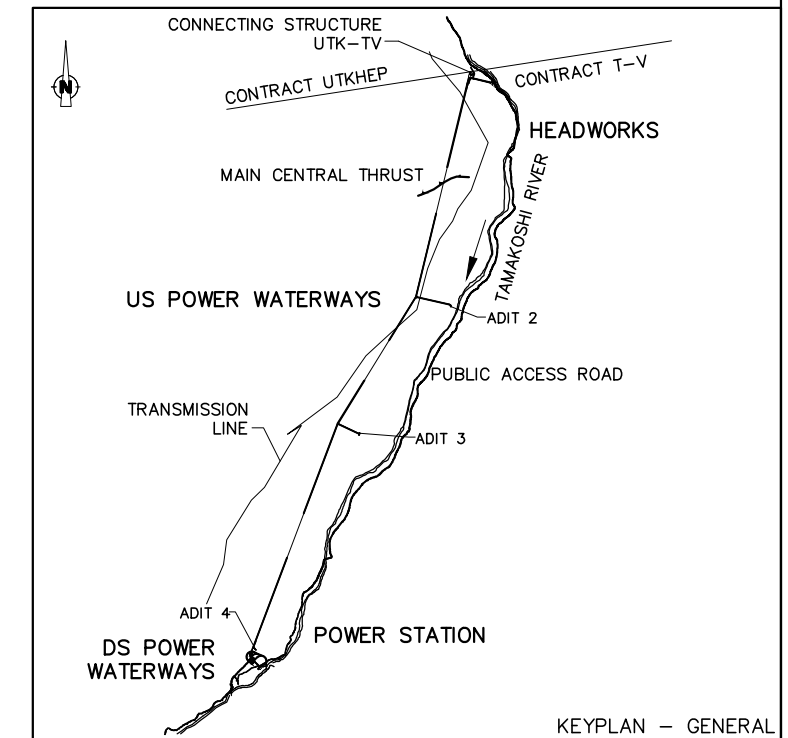


Reference Drawings																														
Drwg. No.		Title																												
31-00053-DD-4813-1800		PROJECT ROADS, GENERAL, LAYOUT																												
Revisions																														
	Name	Date	Notes																											
<div><div>TAMAKOSHI V HYDROELECTRIC PROJECT PROJECT DEVELOPMENT DEPARTMENT ENGINEERING SERVICES DIRECTORATE NEPAL ELECTRICITY AUTHORITY</div></div>																														
<div><div>LAHMEYER INTERNATIONAL</div></div>			CONSULTING ENGINEERS BAD VILBEL, GERMANY																											
<div><div>TAMAKOSHI V HYDROELECTRIC PROJECT DETAILED ENGINEERING DESIGN</div><table><tr><td></td><td>Name</td><td>Date</td><td rowspan="6">DETAILED DESIGN  <u>PROJECT ROADS</u>  <u>ROAD TO ADIT 2</u>  CROSS SECTION CH 0+160.00-0+240.00  SHEET 4 OF 11 PROJECT DRAWING</td></tr><tr><td>Prepared</td><td>B. Khadka</td><td>23.10.17</td></tr><tr><td>Drawn</td><td>B. Khadka</td><td></td></tr><tr><td>Checked</td><td>Roloff</td><td></td></tr><tr><td>Approved</td><td>Dr. Moeller</td><td></td></tr><tr><td colspan="3">Replaces Drwg. No: ...</td></tr><tr><td colspan="3">CAD- File No.:</td></tr><tr><td colspan="2">Scale A3: 1:200</td><td>Drwg. No.: 31-00053-DD-4813- Q 1803</td><td>REV. —</td></tr></table></div>						Name	Date	DETAILED DESIGN  <u>PROJECT ROADS</u>  <u>ROAD TO ADIT 2</u>  CROSS SECTION CH 0+160.00-0+240.00  SHEET 4 OF 11 PROJECT DRAWING	Prepared	B. Khadka	23.10.17	Drawn	B. Khadka		Checked	Roloff		Approved	Dr. Moeller		Replaces Drwg. No: ...			CAD- File No.:			Scale A3: 1:200		Drwg. No.: 31-00053-DD-4813- Q 1803	REV. —
	Name	Date	DETAILED DESIGN  <u>PROJECT ROADS</u>  <u>ROAD TO ADIT 2</u>  CROSS SECTION CH 0+160.00-0+240.00  SHEET 4 OF 11 PROJECT DRAWING																											
Prepared	B. Khadka	23.10.17																												
Drawn	B. Khadka																													
Checked	Roloff																													
Approved	Dr. Moeller																													
Replaces Drwg. No: ...																														
CAD- File No.:																														
Scale A3: 1:200		Drwg. No.: 31-00053-DD-4813- Q 1803	REV. —																											



- NOTES:

1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).



Reference Drawings			
Drwg. No.		Title	
31-00053-DD-4813-1800		PROJECT ROADS, GENERAL, LAYOUT	
Revisions			
	Name	Date	Notes



TAMAKOSHI V HYDROELECTRIC PROJECT  
PROJECT DEVELOPMENT DEPARTMENT  
ENGINEERING SERVICES DIRECTORATE  
NEPAL ELECTRICITY AUTHORITY



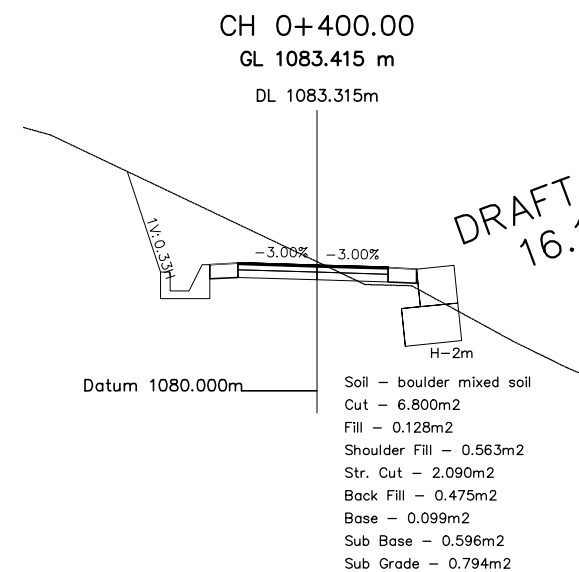
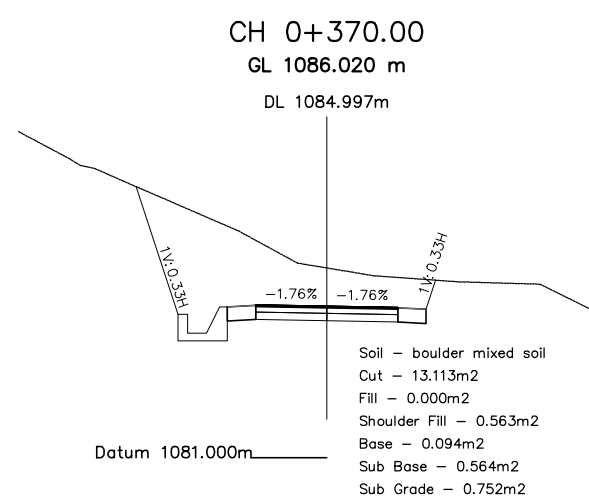
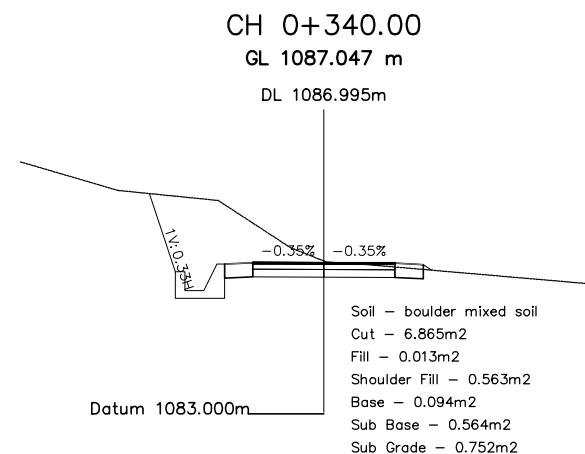
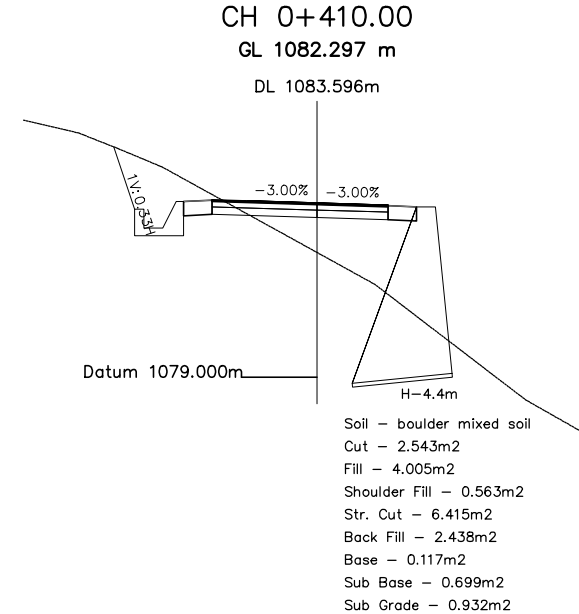
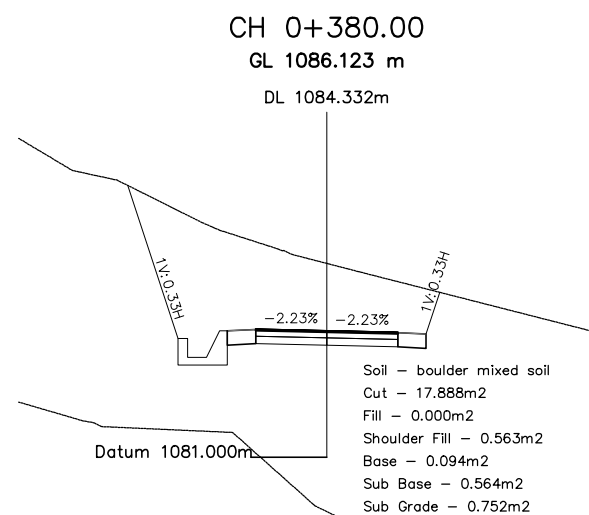
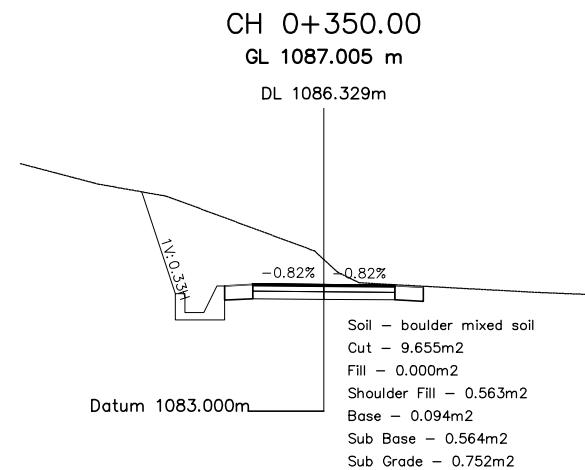
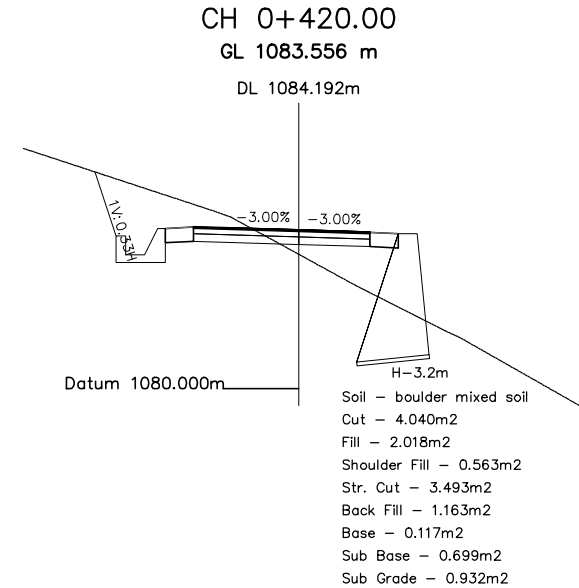
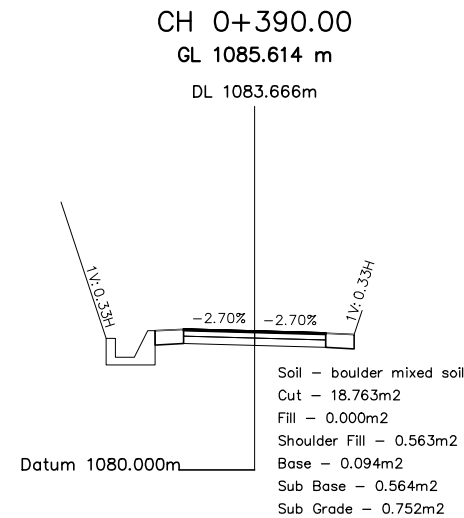
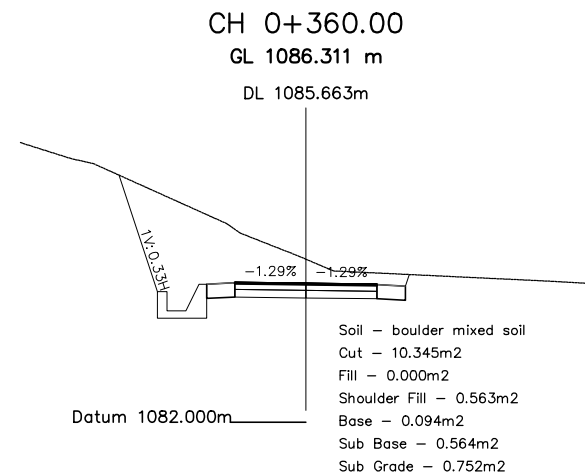
CONSULTING ENGINEERS  
BAD VILBEL, GERMANY

## TAMAKOSHI V HYDROELECTRIC PROJECT DETAILED ENGINEERING DESIGN

	Name	Date	DETAILED DESIGN	
Prepared	B. Khadka	23.10.17	<u>PROJECT ROADS</u> <u>ROAD TO ADIT 2</u> <u>CROSS SECTION</u> <u>CH 0+250.00-0+330.00</u> SHEET 5 OF 11 PROJECT DRAWING	
Drawn	B. Khadka			
Checked	Roloff			
Approved	Dr. Moeller			
Replaces Drwg. No:				
...				
<u>CAD— File No.:</u>				
Scale A3: 1:200			Drwg. No.: 31-00053-DD-4813- <b>Q 1803</b>	
			REV. —	

DRAFT STATUS:  
16.11.2018

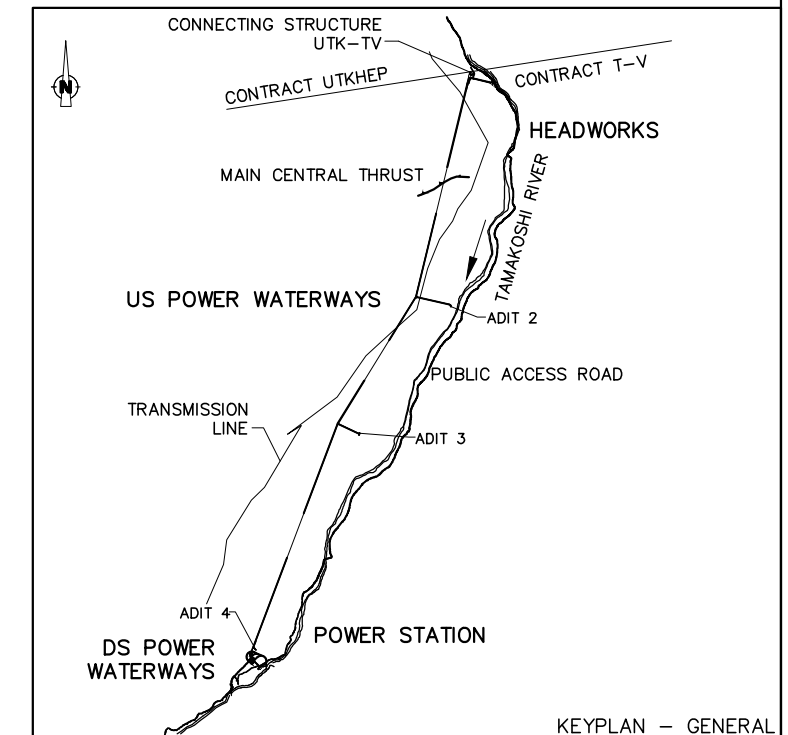






DRAFT STATUS:  
16.11.2018

## NOTES:

1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).

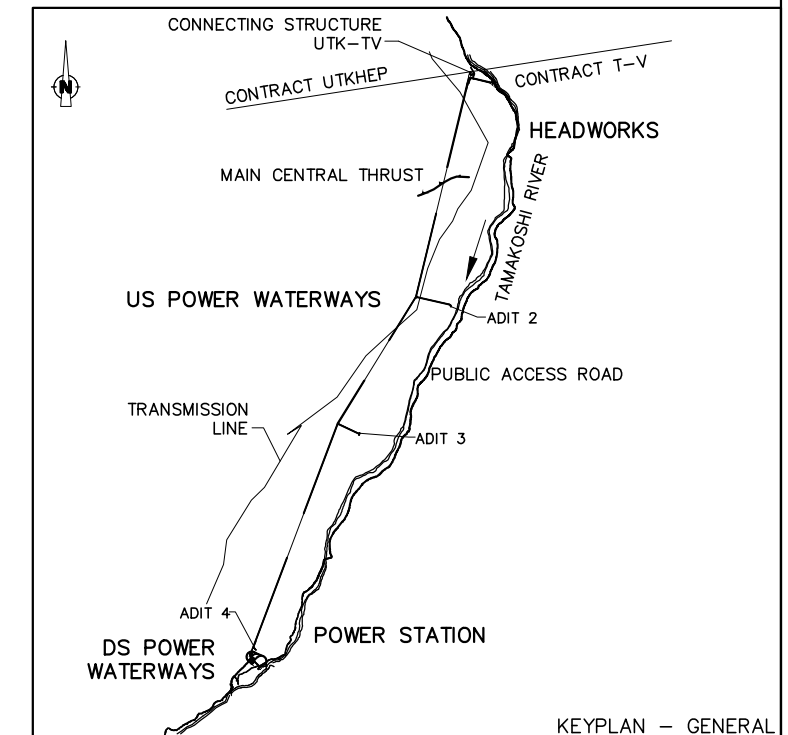
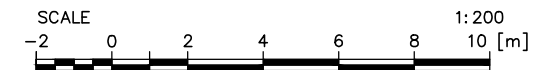




Reference Drawings				
Drwg. No.			Title	
31-00053-DD-4813-1800			PROJECT ROADS, GENERAL, LAYOUT	
Revisions				
	Name	Date	Notes	

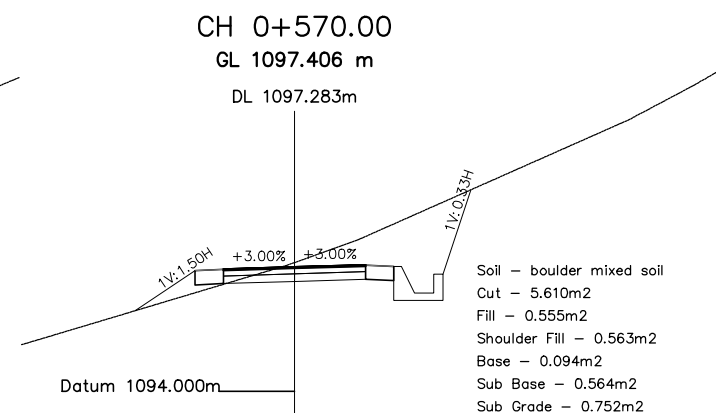
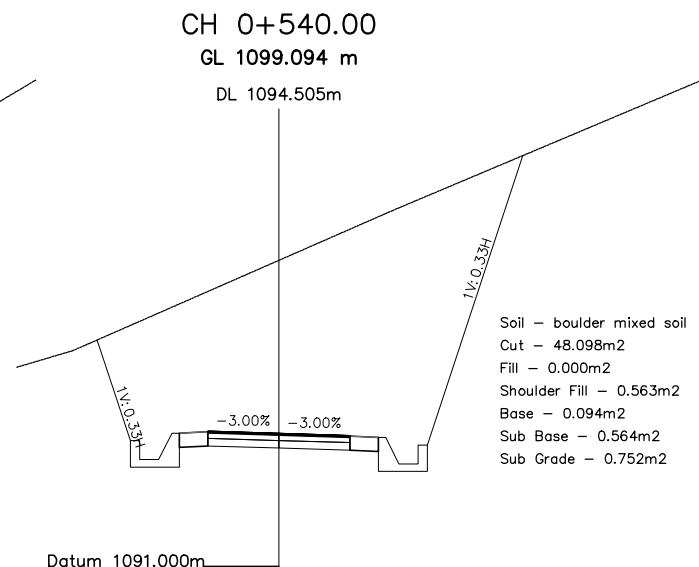
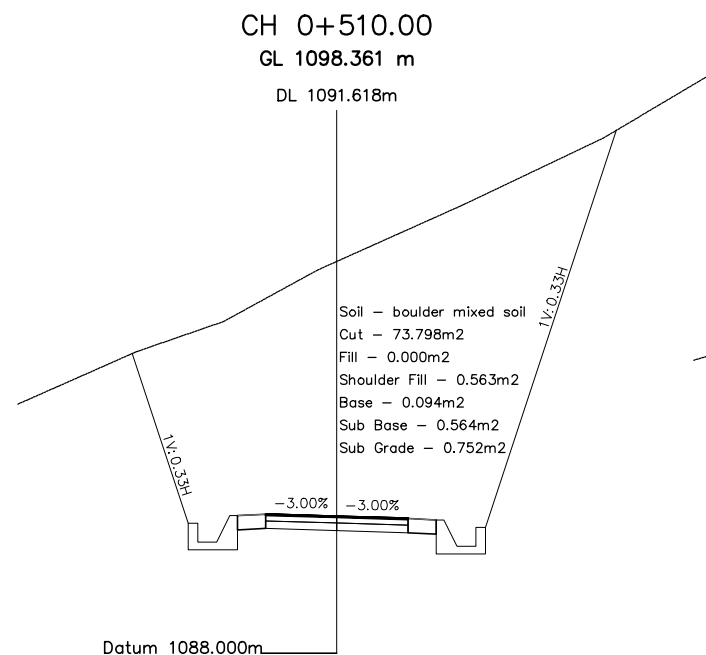
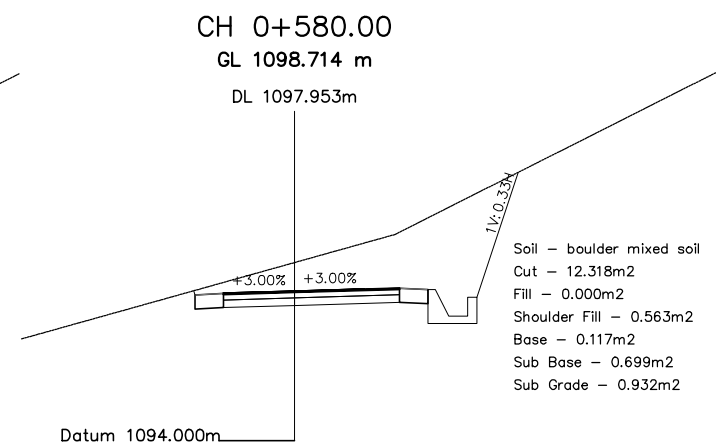
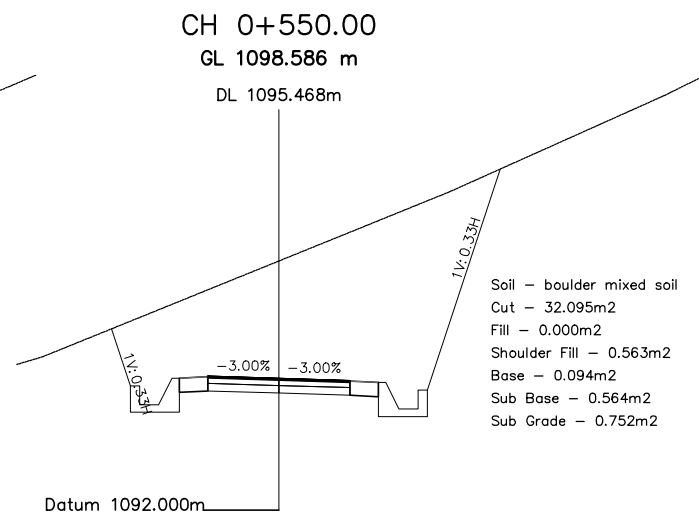
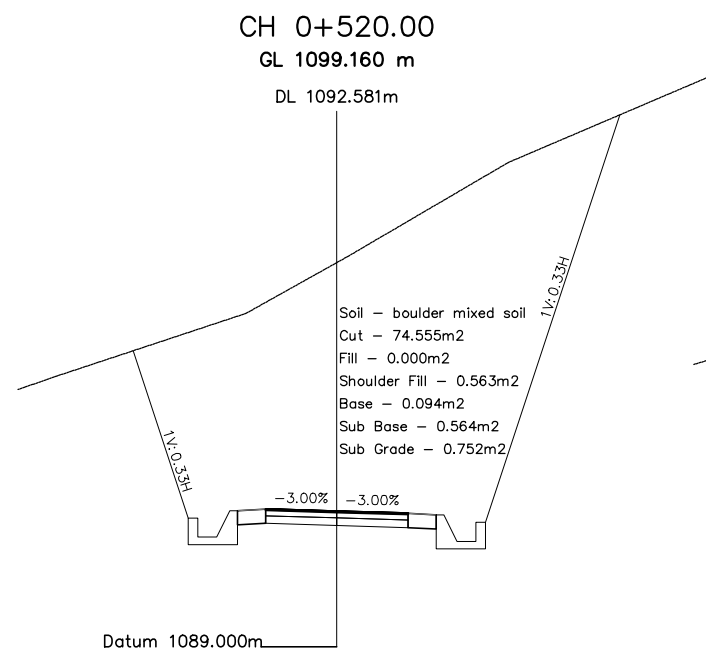
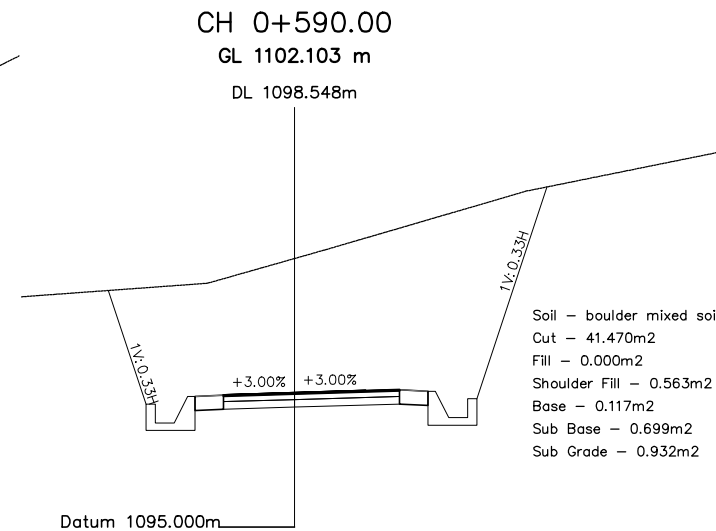
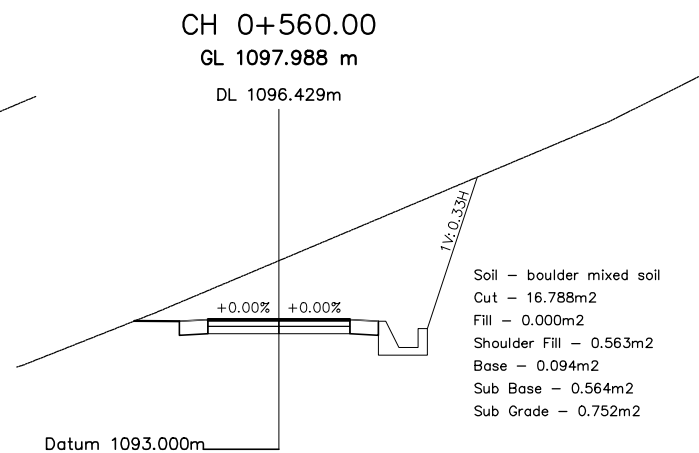
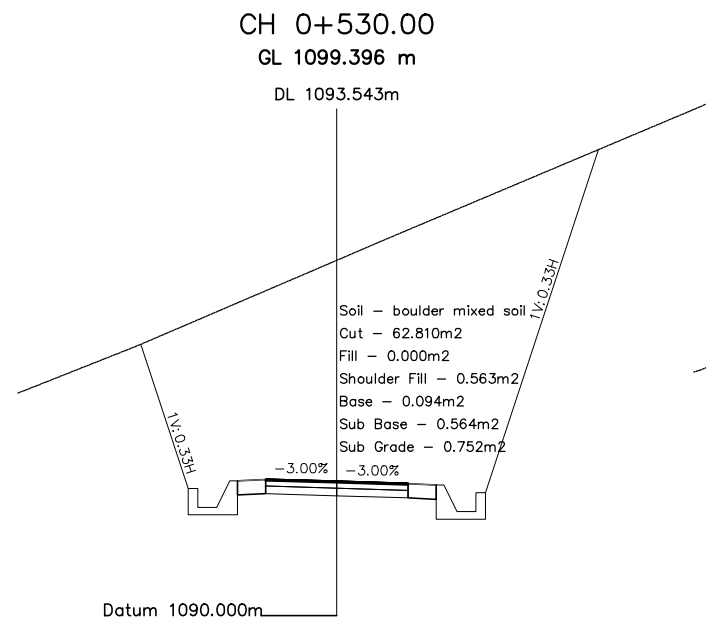
		<b>TAMAKOSHI V HYDROELECTRIC PROJECT</b> <b>PROJECT DEVELOPMENT DEPARTMENT</b> <b>ENGINEERING SERVICES DIRECTORATE</b> <b>NEPAL ELECTRICITY AUTHORITY</b>	
 <b>LAHMEYER INTERNATIONAL</b>		<b>CONSULTING ENGINEERS</b> <b>BAD VILBEL, GERMANY</b>	
<b>TAMAKOSHI V HYDROELECTRIC PROJECT</b> <b>DETAILED ENGINEERING DESIGN</b>			
	<b>Name</b>	<b>Date</b>	<b>DETAILED DESIGN</b>
<b>Prepared</b>	B. Khadka	23.10.17	<u><b>PROJECT ROADS</b></u> <u><b>ROAD TO ADIT 2</b></u> <b>CROSS SECTION</b> <b>CH 0+340.00–0+420.00</b> <b>SHEET 6 OF 11</b> <b>PROJECT DRAWING</b>
<b>Drawn</b>	B. Khadka		
<b>Checked</b>	Roloff		
<b>Approved</b>	Dr. Moeller		
<b>Replaces Drwg. No:</b> ...			
<b>CAD– File No.:</b>			
<b>Scale A3:</b>	<b>1:200</b>	<b>Drwg. No.:</b> 31–00053–DD–4813–	<b>Q 1803</b>
		<b>REV.</b>	<b>—</b>



1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).

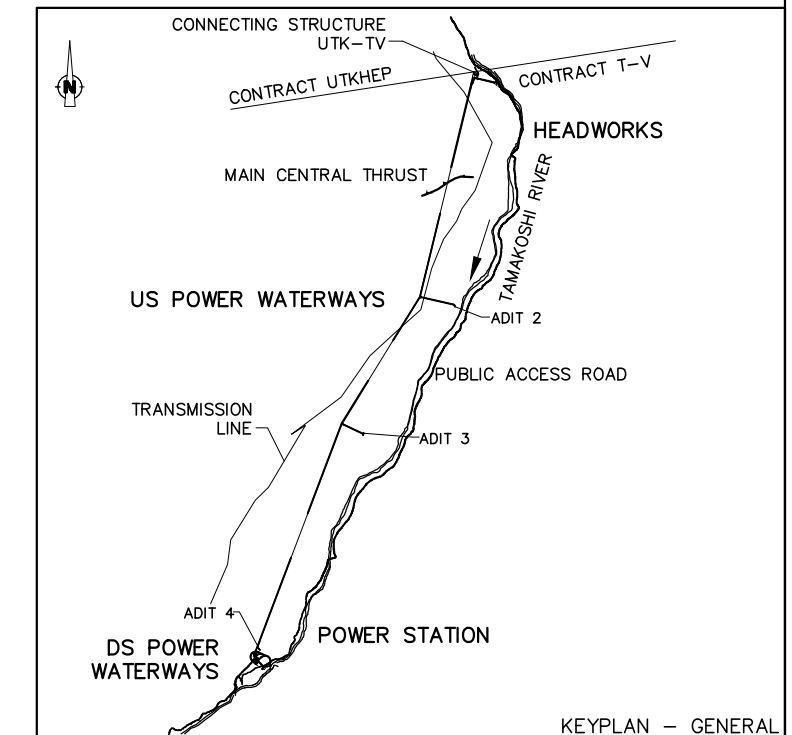


Reference Drawings																																				
Drwg. No.		Title																																		
31-00053-DD-4813-1800		PROJECT ROADS, GENERAL, LAYOUT																																		
Revisions																																				
Name		Date	Notes																																	
<div><div><p>TAMAKOSHI V HYDROELECTRIC PROJECT PROJECT DEVELOPMENT DEPARTMENT ENGINEERING SERVICES DIRECTORATE NEPAL ELECTRICITY AUTHORITY</p></div><div><div><p>LAHMEYER INTERNATIONAL</p></div><div>CONSULTING ENGINEERS BAD VILBEL, GERMANY</div></div></div>																																				
<div><div><b>TAMAKOSHI V HYDROELECTRIC PROJECT</b> <b>DETAILED ENGINEERING DESIGN</b></div><div><table><tr><td></td><td>Name</td><td>Date</td><td rowspan="7">DETAILED DESIGN <u>PROJECT ROADS</u> <u>ROAD TO ADIT 2</u> CROSS SECTION CH 0+430.00-0+500.00 SHEET 7 OF 11 PROJECT DRAWING</td></tr><tr><td>Prepared</td><td>B. Khadka</td><td>23.10.17</td></tr><tr><td>Drawn</td><td>B. Khadka</td><td></td></tr><tr><td>Checked</td><td>Roloff</td><td></td></tr><tr><td>Approved</td><td>Dr. Moeller</td><td></td></tr><tr><td colspan="2">Replaces Drwg. No:</td><td></td></tr><tr><td colspan="2">...</td><td></td></tr><tr><td colspan="2">CAD- File No.:</td><td></td></tr><tr><td colspan="2">Scale A3: 1:200</td><td colspan="2">Drwg. No.: 31-00053-DD-4813- Q 1803</td></tr><tr><td colspan="2"></td><td>REV.</td><td>—</td></tr></table></div></div>					Name	Date	DETAILED DESIGN <u>PROJECT ROADS</u> <u>ROAD TO ADIT 2</u> CROSS SECTION CH 0+430.00-0+500.00 SHEET 7 OF 11 PROJECT DRAWING	Prepared	B. Khadka	23.10.17	Drawn	B. Khadka		Checked	Roloff		Approved	Dr. Moeller		Replaces Drwg. No:			...			CAD- File No.:			Scale A3: 1:200		Drwg. No.: 31-00053-DD-4813- Q 1803				REV.	—
	Name	Date	DETAILED DESIGN <u>PROJECT ROADS</u> <u>ROAD TO ADIT 2</u> CROSS SECTION CH 0+430.00-0+500.00 SHEET 7 OF 11 PROJECT DRAWING																																	
Prepared	B. Khadka	23.10.17																																		
Drawn	B. Khadka																																			
Checked	Roloff																																			
Approved	Dr. Moeller																																			
Replaces Drwg. No:																																				
...																																				
CAD- File No.:																																				
Scale A3: 1:200		Drwg. No.: 31-00053-DD-4813- Q 1803																																		
		REV.	—																																	



#### NOTES:

1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).



KEYPLAN – GENERAL

#### Reference Drawings

Drwg. No.	Title
31-00053-DD-4813-1800	PROJECT ROADS, GENERAL, LAYOUT

Revisions	Name	Date	Notes



TAMAKOSHI V HYDROELECTRIC PROJECT  
PROJECT DEVELOPMENT DEPARTMENT  
ENGINEERING SERVICES DIRECTORATE  
NEPAL ELECTRICITY AUTHORITY



CONSULTING ENGINEERS  
BAD VILBEL, GERMANY

#### TAMAKOSHI V HYDROELECTRIC PROJECT DETAILED ENGINEERING DESIGN

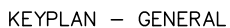
Name	Date	DETAILLED DESIGN
Prepared B. Khadka	23.10.17	PROJECT ROADS
Drawn B. Khadka		ROAD TO ADIT 2
Checked Roloff		CROSS SECTION
Approved Dr. Moeller		CH 0+510.00–0+590.00
Replaces Drwg. No: ...		SHEET 8 OF 11
CAD- File No.:		PROJECT DRAWING
Scale A3: 1:200	Drwg. No.: 31-00053-DD-4813- Q 1803	REV. –

DRAFT STATUS:  
16.11.2018

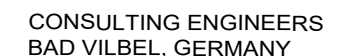
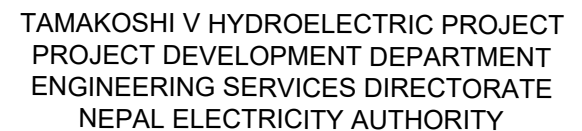




- SCALE 1: 200
- 
- 2 0 2 4 6 8 10 [m]



Revisions			
	Name	Date	Notes

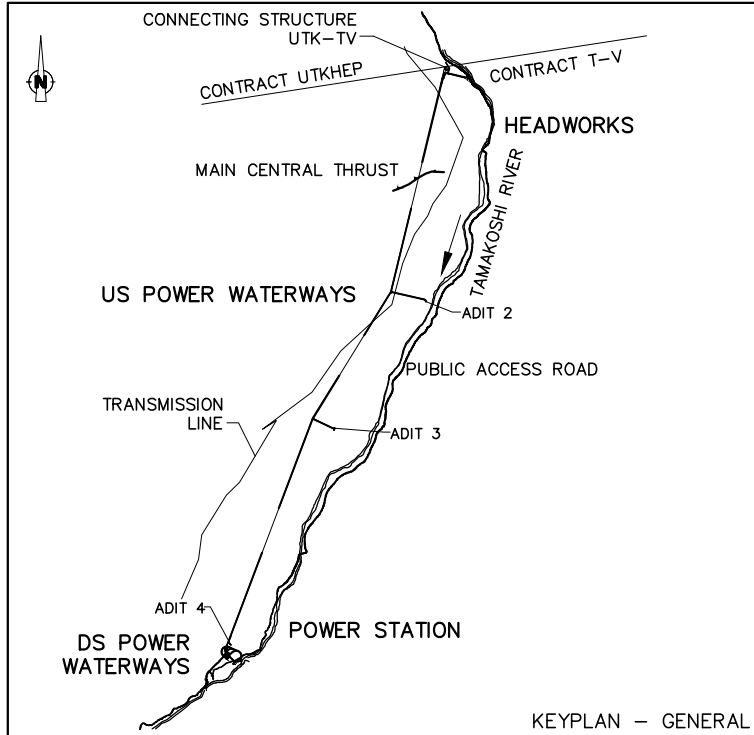


## TAMAKOSHI V HYDROELECTRIC PROJECT DETAILED ENGINEERING DESIGN


	Name	Date	DETAILED DESIGN	
Prepared	B. Khadka	23.10.17	<u>PROJECT ROADS</u> <u>ROAD TO ADIT 2</u> <u>CROSS SECTION</u> <u>CH 0+600.00–0+680.00</u> SHEET 9 OF 11 PROJECT DRAWING	
Drawn	B. Khadka			
Checked	Roloff			
Approved	Dr. Moeller			
Replaces Drwg. No: ...				
CAD– File No.:				
Scale A3: 1:200			Drwg. No.: 31–00053–DD–4813– <b>Q 1803</b> REV. –	

NOTES:


1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).



Reference Drawings				
Drwg. No.			Title	
31-00053-DD-4813-1800			PROJECT ROADS, GENERAL, LAYOUT	
Revisions				



**TAMAKOSHI V HYDROELECTRIC PROJECT**  
PROJECT DEVELOPMENT DEPARTMENT  
ENGINEERING SERVICES DIRECTORATE  
NEPAL ELECTRICITY AUTHORITY



**LAHMEYER INTERNATIONAL**

CONSULTING ENGINEERS  
BAD VILBEL, GERMANY

TAMAKOSHI V HYDROELECTRIC PROJECT DETAILED ENGINEERING DESIGN			DETAILED DESIGN  <b>PROJECT ROADS</b> <b>ROAD TO ADIT 2</b> <b>CROSS SECTION</b> <b>CH 0+690.00-0+770.00</b> SHEET 10 OF 11 PROJECT DRAWING
	Name	Date	
Prepared	B. Khadka	23.10.17	
Drawn	B. Khadka		
Checked	Roloff		
Approved	Dr. Moeller		
Replaces Drwg. No:			
CAD- File No.:			
Scale A3:	1:200		
Drwg. No.: 31-00053-DD-4813- Q 1803			REV. -

DRAFT STATUS:  
16.11.2018

Soil - boulder mixed soil  
 Cut - 139.308m<sup>2</sup>  
 Fill - 0.000m<sup>2</sup>  
 Shoulder Fill - 0.563m<sup>2</sup>  
 Base - 0.117m<sup>2</sup>  
 Sub Base - 0.699m<sup>2</sup>  
 Sub Grade - 0.932m<sup>2</sup>

1V:0.33H

+2.90% +2.90%

Datum 1111.000m

Soil – boulder mixed soil  
 Cut – 17.428m<sup>2</sup>  
 Fill – 0.568m<sup>2</sup>  
 Shoulder Fill – 0.563m<sup>2</sup>  
 Str. Cut – 4.863m<sup>2</sup>  
 Back Fill – 2.053m<sup>2</sup>  
 Base – 0.115m<sup>2</sup>  
 Sub Base – 0.687m<sup>2</sup>  
 Sub Grade – 0.916m<sup>2</sup>

1:0.33H

+2.90% +2.90%

Datum 1111.000m

H=3.2m

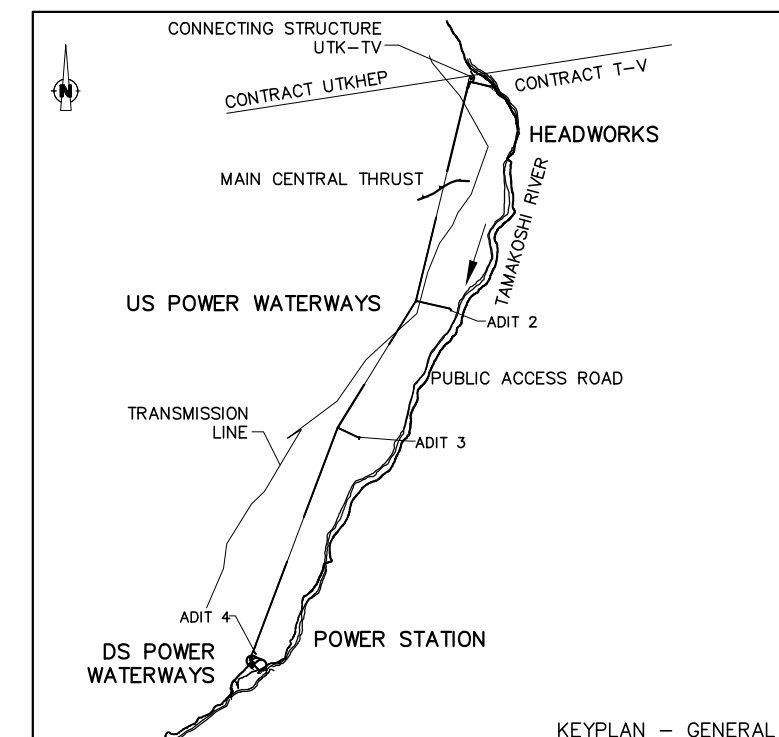
Soil – boulder mixed soil  
Cut – 12.275m  
Fill – 2.680m  
Shoulder Fill – 0.563m  
Str. Cut – 4.270m  
Back Fill – 1.518m  
Base – 0.109m  
Sub Base – 0.654m  
Sub Grade – 0.872m

Datum 1111.000m



H=3.8m

[illegible]

1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).

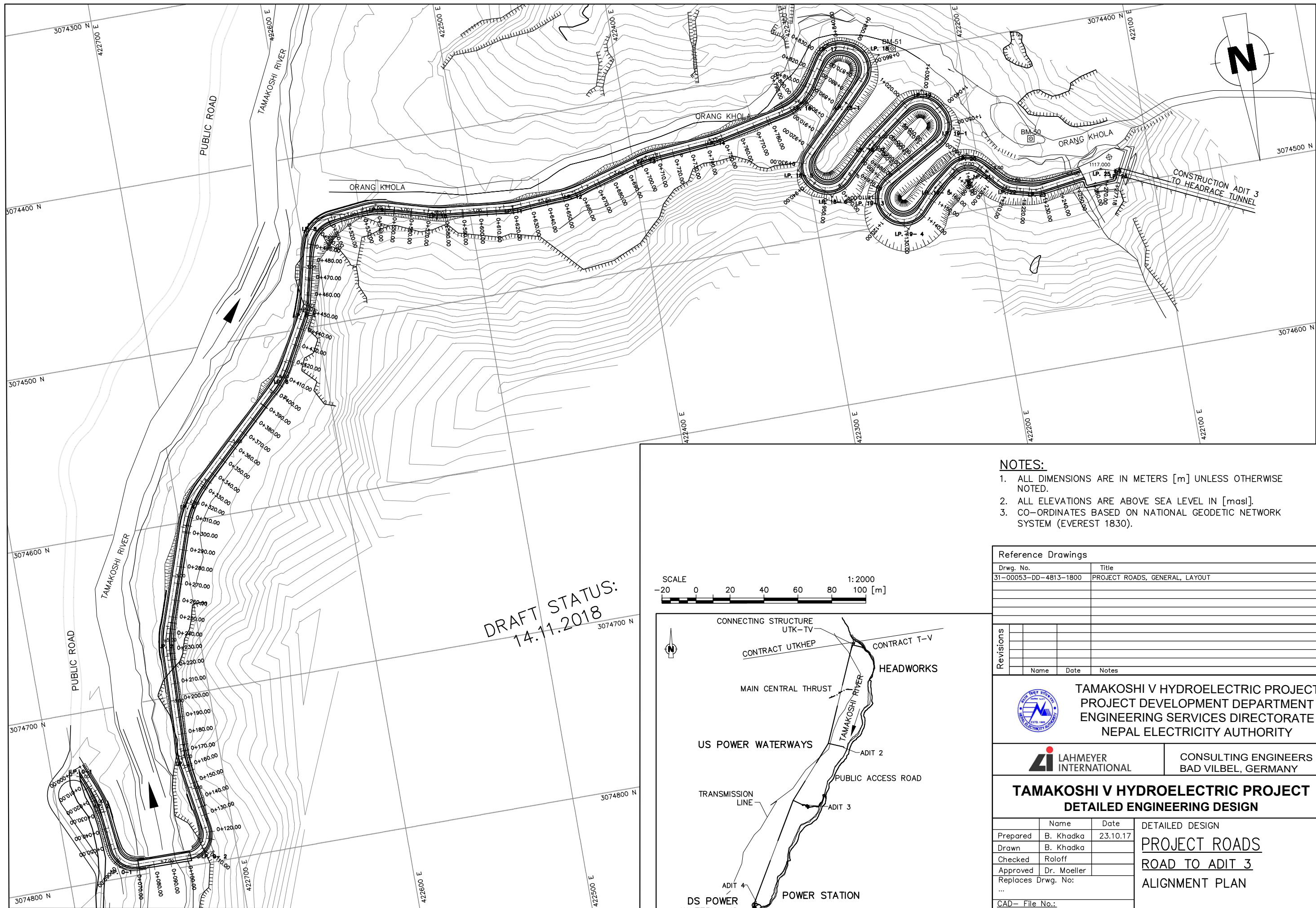


Reference Drawings			
Drwg. No.			Title
31-00053-DD-4813-1800			PROJECT ROADS, GENERAL, LAYOUT
Revisions			
	Name	Date	Notes

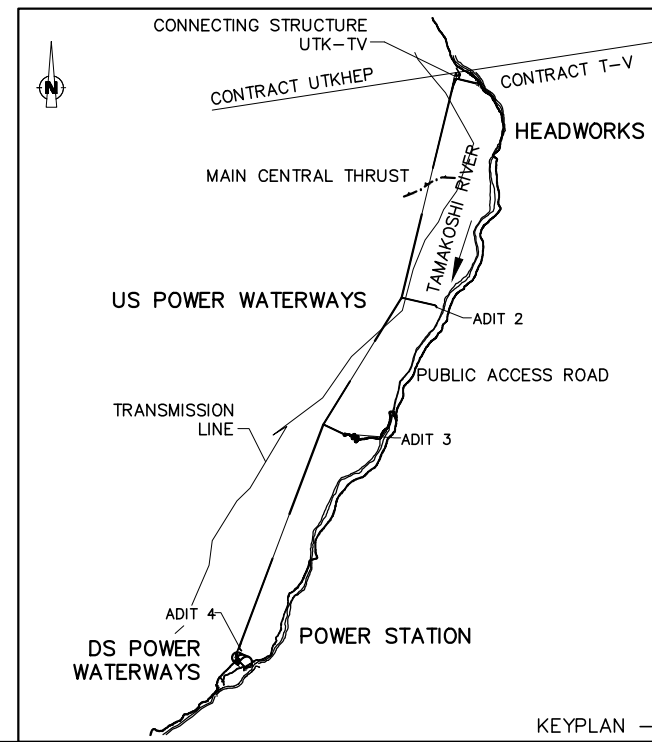
 <div style="display: inline-block; vertical-align: middle; text-align: center;"> <b>TAMAKOSHI V HYDROELECTRIC PROJECT</b>  <b>PROJECT DEVELOPMENT DEPARTMENT</b>  <b>ENGINEERING SERVICES DIRECTORATE</b>  <b>NEPAL ELECTRICITY AUTHORITY</b> </div>			
 <div style="display: inline-block; vertical-align: middle;"> <b>LAHMEYER</b>  <b>INTERNATIONAL</b> </div>	<b>CONSULTING ENGINEERS</b> <b>BAD VILBEL, GERMANY</b>		
<b>TAMAKOSHI V HYDROELECTRIC PROJECT</b> <b>DETAILED ENGINEERING DESIGN</b>			
	<b>DETAILED DESIGN</b>		
Prepared	B. Khadka	Date	23.10.17
Drawn	B. Khadka		
Checked	Roloff		
Approved	Dr. Moeller		
Replaces Drwg. No:			
...			
CAD- File No.:			
		<b>PROJECT ROADS</b> <b>ROAD TO ADIT 2</b> <b>CROSS SECTION</b> <b>CH 0+780.00-0+808.22</b> <b>SHEET 11 OF 11</b> <b>PROJECT DRAWING</b>	
Scale A3: 1:200		Drwg. No.: 31-00053-DD-4813- <b>Q 1803</b>	
		REV.	-

DRAFT STATUS:  
16.11.2018





DRAFT STATUS:  
14.11.2018




- NOTES:**
1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
  2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
  3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).


Reference Drawings		
Drwg. No.	Title	
31-00053-DD-4813-1800	PROJECT ROADS, GENERAL, LAYOUT	

Revisions			
	Name	Date	Notes



**TAMAKOSHI V HYDROELECTRIC PROJECT**  
PROJECT DEVELOPMENT DEPARTMENT  
ENGINEERING SERVICES DIRECTORATE  
NEPAL ELECTRICITY AUTHORITY



**LAHMEYER INTERNATIONAL**

CONSULTING ENGINEERS  
BAD VILBEL, GERMANY

**TAMAKOSHI V HYDROELECTRIC PROJECT**  
**DETAILED ENGINEERING DESIGN**

	Name	Date
Prepared	B. Khadka	23.10.17
Drawn	B. Khadka	
Checked	Roloff	
Approved	Dr. Moeller	
Replaces Drwg. No:		
...		
CAD- File No.:		

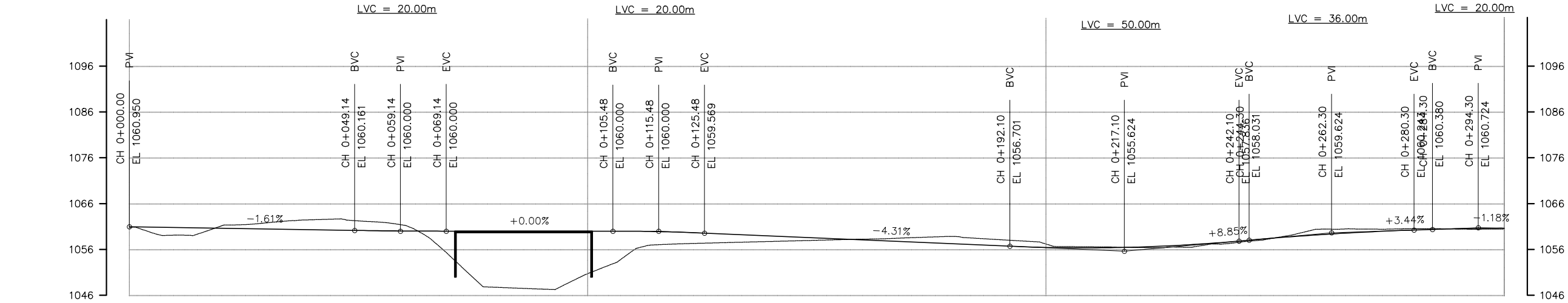
Scale A3: 1:2000

DETAILED DESIGN  
**PROJECT ROADS**  
**ROAD TO ADIT 3**  
**ALIGNMENT PLAN**

PROJECT DRAWING

Drwg. No.: 31-00053-DD-4813- Q 1804 REV. —

KEYPLAN — GENERAL



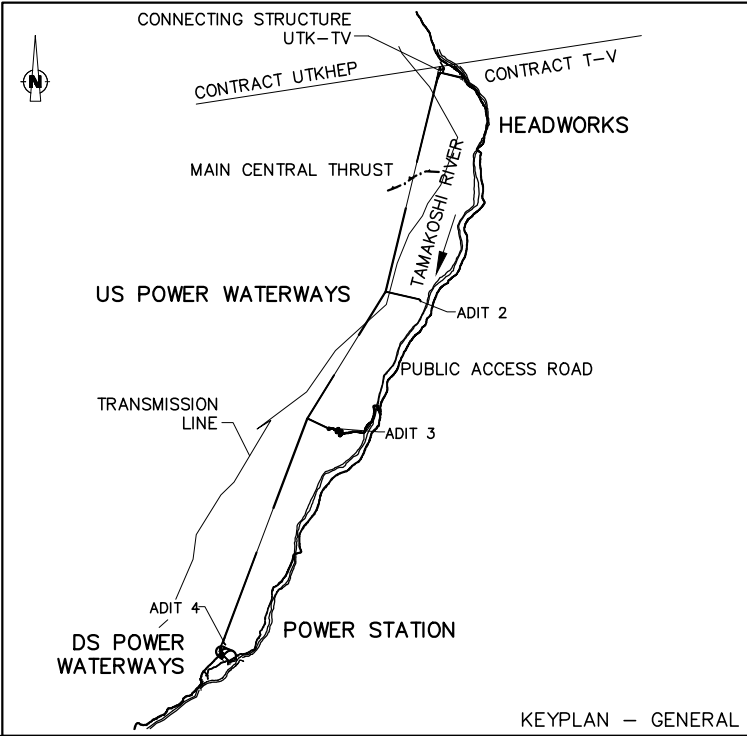
DESIGN LEVEL (m)	+1060.950	+1060.789	+1060.629	+1060.468	+1060.307	+1060.147	+1060.034	+1060.000	+1060.000	+1060.000	+1059.978	+1059.773	+1059.375	+1058.944	+1058.513	+1058.083	+1057.652	+1057.222	+1056.791	+1056.442	+1056.351	+1056.523	+1056.958	+1057.656	+1058.511	+1059.235	+1059.809	+1060.232	+1060.539	+1060.635	
EXISTING LEVEL (m)	+1060.710	+1059.128	+1061.104	+1061.809	+1062.482	+1062.228	+1061.277	+1054.527	+1047.744	+1047.348	+1050.720	+1055.831	+1057.224	+1057.748	+1058.004	+1058.250	+1058.551	+1058.828	+1058.130	+1057.184	+1056.577	+1056.424	+1056.487	+1057.307	+1058.524	+1060.427	+1060.450	+1060.543	+1060.455	+1060.468	
CHAINAGE (km)	+0+000.00	+0+010.00	+0+020.00	+0+030.00	+0+040.00	+0+050.00	+0+060.00	+0+070.00	+0+080.00	+0+090.00	+0+100.00	+0+110.00	+0+120.00	+0+130.00	+0+140.00	+0+150.00	+0+160.00	+0+170.00	+0+180.00	+0+190.00	+0+200.00	+0+210.00	+0+220.00	+0+230.00	+0+240.00	+0+250.00	+0+260.00	+0+270.00	+0+280.00	+0+290.00	+0+300.00

IP.No	CO-ORDINATES(m)		WCB (D-M-S)	DIST (m)	DEF. ANG (D-M-S)	TAN. LEN (m)	SIMPLE CURVE DATA			CHAINAGE			
	EASTING	NORTHING					R (m)	E (m)	LC (m)	BC	MC	EC	IP
0-1	422782.625	3074731.250	338-31-21	0.000	00-00-00	0.000	11.000	0.000	0.000	0+000.00	0+000.00	0+000.00	0+000.00
2	422773.969	3074753.250	353-58-21	23.642	15-27-09	6.784	50.000	0.458	13.485	0+016.86	0+023.60	0+030.34	0+023.64
0-1	422769.719	3074793.500	270-30-47	40.474	83-27-25	11.148	12.500	4.249	18.208	0+052.88	0+061.99	0+071.09	0+064.03
0- 2	422713.906	3074794.000	171-07-10	55.815	99-23-27	14.737	12.500	6.824	21.684	0+101.02	0+111.86	0+122.70	0+115.76
1	422722.812	3074737.000	182-00-03	57.692	10-52-49	5.714	60.000	0.271	11.394	0+159.94	0+165.64	0+171.33	0+165.65
2	422720.375	3074667.250	198-50-15	69.793	16-50-21	8.881	60.000	0.654	17.634	0+226.53	0+235.35	0+244.16	0+235.41

- NOTES:
- ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
  - ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
  - CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).



DRAFT STATUS:  
14.11.2018



Reference Drawings

Drwg. No.	Title
31-00053-DD-4813-1800	PROJECT ROADS, GENERAL, LAYOUT

Revisions

	Name	Date	Notes

TAMAKOSHI V HYDROELECTRIC PROJECT  
PROJECT DEVELOPMENT DEPARTMENT  
ENGINEERING SERVICES DIRECTORATE  
NEPAL ELECTRICITY AUTHORITY

LAHMEYER  
INTERNATIONAL

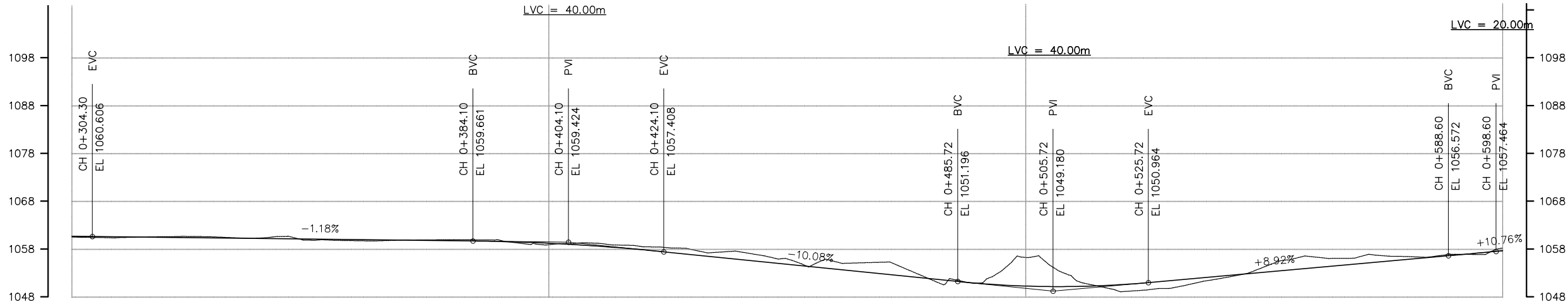
CONSULTING ENGINEERS  
BAD VILBEL, GERMANY

TAMAKOSHI V HYDROELECTRIC PROJECT  
DETAILED ENGINEERING DESIGN

	Name	Date
Prepared	B. Khadka	23.10.17
Drawn	B. Khadka	
Checked	Roloff	
Approved	Dr. Moeller	
Replaces Drwg. No:		
...		
CAD- File No.:		
Scale A3:	1:1000	

DETAILED DESIGN  
**PROJECT ROADS**  
**ROAD TO ADIT 3**  
**LONGITUDINAL PROFILE**  
SHEET 1 OF 5  
  
PROJECT DRAWING

Drwg. No.: 31-00053-DD-4813- Q 1805 REV. -



DESIGN LEVEL (m)	1060.635	1060.538	1060.420	1060.301	1060.183	1060.065	1059.946	1059.828	1059.709	1059.552	1059.191	1058.608	1057.802	1056.813	1055.805	1054.797	1053.789	1052.781	1051.773	1050.808	1050.241	1051.149	1050.531	1051.346	1052.237	1053.129	1054.021	1054.913	1055.805	1056.698	1057.649
EXISTING LEVEL (m)	1060.468	1060.387	1060.549	1060.520	1060.313	1059.827	1059.726	1059.869	1059.944	1059.767	1058.887	1059.216	1058.456	1057.864	1057.410	1055.922	1055.373	1055.230	1051.653	1050.826	1056.211	1051.931	1049.058	1049.714	1051.683	1054.244	1056.378	1056.370	1056.411	1056.891	1058.206
CHAINAGE (km)	0+300.00	0+310.00	0+320.00	0+330.00	0+340.00	0+350.00	0+360.00	0+370.00	0+380.00	0+390.00	0+400.00	0+410.00	0+420.00	0+430.00	0+440.00	0+450.00	0+460.00	0+470.00	0+480.00	0+490.00	0+500.00	0+510.00	0+520.00	0+530.00	0+540.00	0+550.00	0+560.00	0+570.00	0+580.00	0+590.00	0+600.00

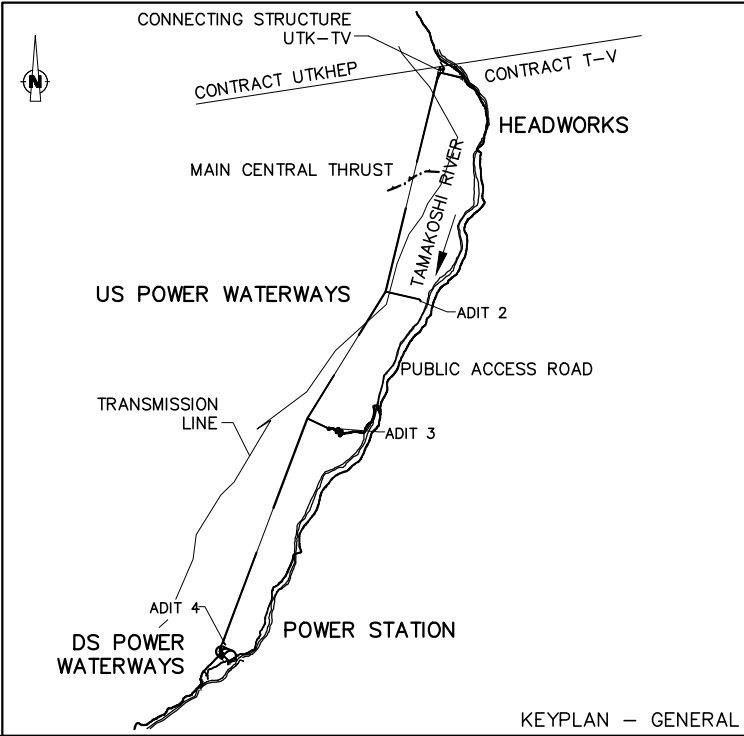
IP.No	CO-ORDINATES(m)		WCB (D-M-S)	DIST (m)	DEF. ANG (D-M-S)	TAN. LEN. (m)	SIMPLE CURVE DATA			CHAINAGE			
	EASTING	NORTHING					R (m)	E (m)	LC (m)	BC	MC	EC	IP
4	422693.594	3074588.750	226-46-33	82.943	27-56-14	14.925	60.000	1.828	29.256	0+303.30	0+317.93	0+332.56	0+318.22
6	422626.562	3074525.750	209-04-31	91.991	17-41-55	9.341	60.000	0.723	18.534	0+400.28	0+409.55	0+418.81	0+409.62
6-1	422606.406	3074489.500	193-25-16	41.477	15-39-11	5.498	40.000	0.376	10.928	0+445.45	0+450.92	0+456.38	0+450.95
8	422594.594	3074440.000	264-02-45	50.890	70-37-22	14.167	20.000	4.509	24.652	0+487.60	0+499.93	0+512.25	0+501.77
9	422553.844	3074435.750	285-51-04	40.971	21-48-24	7.705	40.000	0.735	15.224	0+531.35	0+538.96	0+546.57	0+539.06
10	422518.625	3074445.750	276-09-25	36.611	09-41-40	5.088	60.000	0.215	10.152	0+570.39	0+575.47	0+580.54	0+575.48





NOTES:

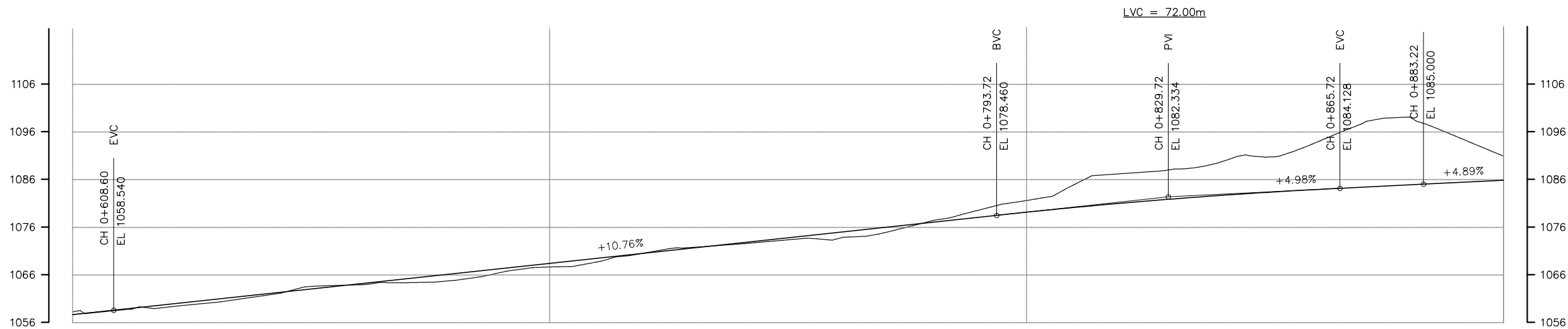
- ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
- ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
- CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).

DRAFT STATUS:  
14.11.2018



Reference Drawings			
Drwg. No.		Title	
31-00053-DD-4813-1800		PROJECT ROADS, GENERAL, LAYOUT	
Revisions			
	Name	Date	Notes
<div><div>TAMAKOSHI V HYDROELECTRIC PROJECT PROJECT DEVELOPMENT DEPARTMENT ENGINEERING SERVICES DIRECTORATE NEPAL ELECTRICITY AUTHORITY</div></div>			
<div>LAHMEYER INTERNATIONAL</div>		CONSULTING ENGINEERS BAD VILBEL, GERMANY	
<div>TAMAKOSHI V HYDROELECTRIC PROJECT DETAILED ENGINEERING DESIGN</div>			
	Name	Date	DETAILED DESIGN
Prepared	B. Khadka	23.10.17	PROJECT ROADS ROAD TO ADIT 3 LONGITUDINAL PROFILE SHEET 2 OF 5
Drawn	B. Khadka		
Checked	Roloff		
Approved	Dr. Moeller		
Replaces Drwg. No: ...			
CAD- File No.:		PROJECT DRAWING	
Scale A3: 1:1000		Drwg. No.: 31-00053-DD-4813-Q 1805	REV. -





DESIGN LEVEL (m)	0+600.00	0+610.00	0+620.00	0+630.00	0+640.00	0+650.00	0+660.00	0+670.00	0+680.00	0+690.00	0+700.00	0+710.00	0+720.00	0+730.00	0+740.00	0+750.00	0+760.00	0+770.00	0+780.00	0+790.00	0+800.00	0+810.00	0+820.00	0+830.00	0+840.00	0+850.00	0+860.00	0+870.00	0+880.00	0+890.00	0+900.00
EXISTING LEVEL (m)	1058.206	1058.593	1059.224	1060.201	1061.607	1063.547	1063.889	1064.325	1064.811	1066.527	1067.617	1068.690	1070.564	1071.723	1072.460	1073.324	1073.448	1074.755	1077.272	1079.553	1081.561	1084.911	1087.201	1087.999	1089.423	1090.682	1093.430	1097.522	1099.054	1095.042	1090.870
CHAINAGE (km)	0+600.00	0+610.00	0+620.00	0+630.00	0+640.00	0+650.00	0+660.00	0+670.00	0+680.00	0+690.00	0+700.00	0+710.00	0+720.00	0+730.00	0+740.00	0+750.00	0+760.00	0+770.00	0+780.00	0+790.00	0+800.00	0+810.00	0+820.00	0+830.00	0+840.00	0+850.00	0+860.00	0+870.00	0+880.00	0+890.00	0+900.00

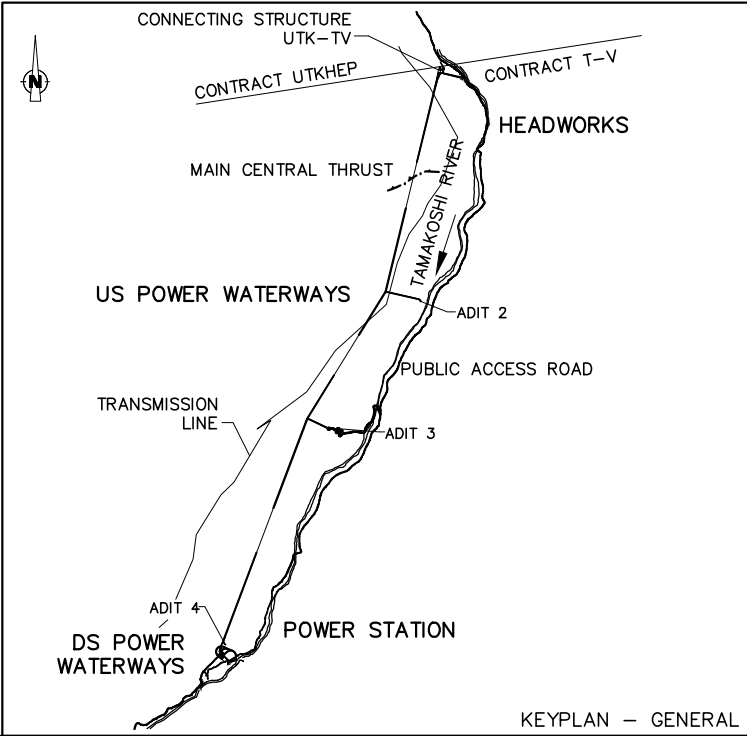
IP.No	CO-ORDINATES(m)		WCB (D-M-S)	DIST (m)	DEF. ANG (D-M-S)	TAN. LEN. (m)	SIMPLE CURVE DATA			CHAINAGE			
	EASTING	NORTHING					R (m)	E (m)	LC (m)	BC	MC	EC	IP
11	422474.594	3074450.500	266-27-05	44.286	09-42-21	5.094	60.000	0.216	10.164	0+614.64	0+619.72	0+624.80	0+619.73
12	422438.312	3074448.250	254-17-23	36.352	12-09-50	6.393	60.000	0.340	12.738	0+649.66	0+656.03	0+662.40	0+656.05
13	422392.094	3074435.250	265-15-51	48.011	10-58-19	5.763	60.000	0.276	11.490	0+698.26	0+704.01	0+709.75	0+704.02
14	422349.844	3074431.750	258-07-05	42.395	07-08-41	3.746	60.000	0.117	7.482	0+742.64	0+746.38	0+750.12	0+746.39
16	422296.375	3074420.500	213-24-07	54.640	44-42-49	12.339	30.000	2.438	23.412	0+788.68	0+800.39	0+812.09	0+801.02
17	422275.438	3074388.750	291-45-29	38.032	78-21-27	10.187	12.500	3.625	17.095	0+827.60	0+836.15	0+844.70	0+837.79
18	422246.625	3074400.250	44-13-21	31.023	112-27-57	18.696	12.500	9.989	24.536	0+846.84	0+859.11	0+871.38	0+865.54
18-1	422270.469	3074424.750	45-29-30	34.188	01-15-58	0.000	0.000	0.000	0.000	0+886.87	0+886.87	0+886.87	0+886.87



NOTES:

1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).

DRAFT STATUS:  
14.11.2018





Reference Drawings

Drwg. No.	Title
31-00053-DD-4813-1800	PROJECT ROADS, GENERAL, LAYOUT

Revisions

No.	Name	Date	Notes

TAMAKOSHI V HYDROELECTRIC PROJECT  
PROJECT DEVELOPMENT DEPARTMENT  
ENGINEERING SERVICES DIRECTORATE  
NEPAL ELECTRICITY AUTHORITY

LAHMEYER  
INTERNATIONAL

CONSULTING ENGINEERS  
BAD VILBEL, GERMANY

Prepared

Drawn

Checked

Approved

...

CAD- File No.:

Name

B. Khadka

B. Khadka

Roloff

Dr. Moeller

Date

23.10.17

DETAILLED DESIGN

PROJECT ROADS

ROAD TO ADIT 3

LONGITUDINAL PROFILE

SHEET 3 OF 5

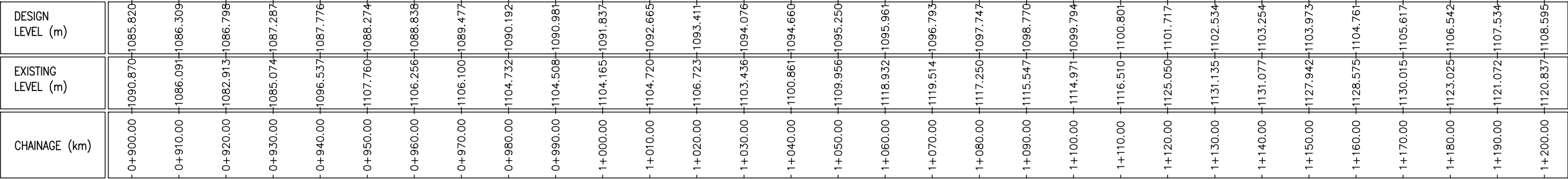
PROJECT DRAWING

Scale A3: 1:1000

Drwg. No.: 31-00053-DD-4813- Q 1805

REV. -

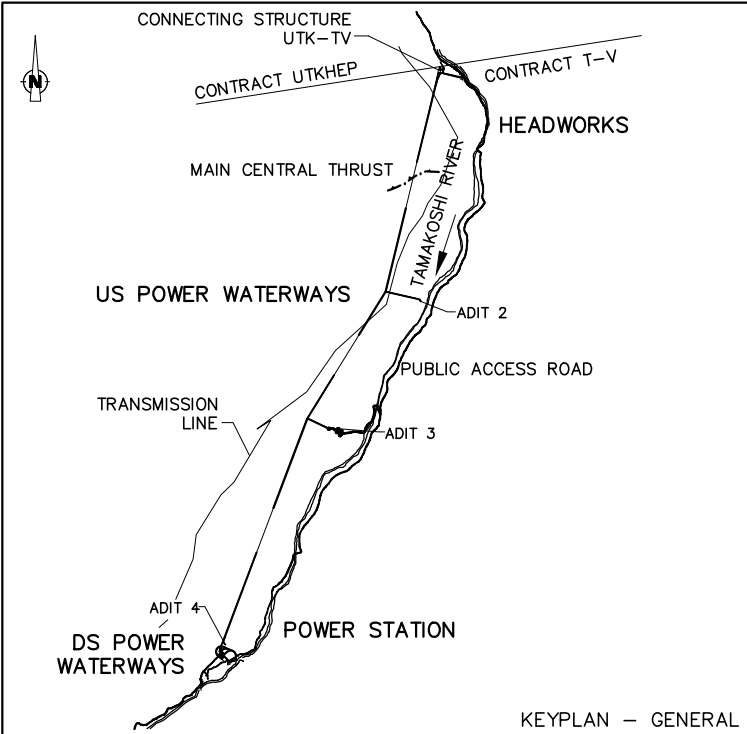






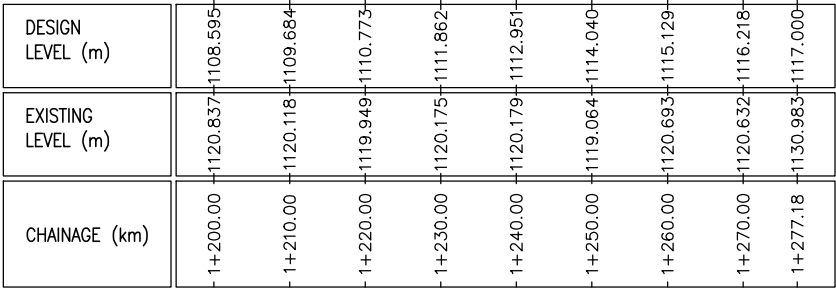
IP.No	CO-ORDINATES(m)		WCB (D-M-S)	DIST (m)	DEF. ANG (D-M-S)	TAN. LEN. (m)	SIMPLE CURVE DATA			CHAINAGE			
	EASTING	NORTHING					R (m)	E (m)	LC (m)	BC	MC	EC	IP
18- 5	422305.312	3074459.000	317-26-20	48.858	88-03-07	12.082	12.500	4.885	19.210	0+923.65	0+933.26	0+942.86	0+935.73
18- 6	422288.094	3074477.750	225-52-25	25.456	91-33-51	12.846	12.500	5.424	19.976	0+943.39	0+953.38	0+963.37	0+956.24
18- 7	422261.031	3074451.500	233-25-41	37.702	07-33-26	2.642	40.000	0.087	5.276	0+985.58	0+988.22	0+990.86	0+988.22
19	422225.312	3074425.000	330-16-15	44.476	96-50-28	14.089	12.500	6.335	21.128	1+018.60	1+029.17	1+039.73	1+032.69
19-1	422210.750	3074450.500	60-21-05	29.365	90-04-49	12.518	12.500	5.190	19.653	1+042.49	1+052.32	1+062.14	1+055.01
19- 3	422266.969	3074482.500	317-37-25	64.688	102-43-32	15.638	12.500	7.520	22.411	1+098.67	1+109.88	1+121.08	1+114.31
19- 4	422247.125	3074504.250	222-54-16	29.442	94-43-16	13.575	12.500	5.953	20.665	1+121.31	1+131.64	1+141.97	1+134.88
19- 5	422227.375	3074483.000	232-34-36	29.011	09-40-17	4.230	50.000	0.179	8.440	1+153.18	1+157.40	1+161.62	1+157.41
20	422205.812	3074466.500	320-57-05	27.152	88-22-22	12.150	12.500	4.932	19.280	1+172.39	1+182.03	1+191.67	1+184.54
21	422195.875	3074478.750	319-05-08	15.774	01-52-04	0.652	40.000	0.005	1.304	1+194.64	1+195.29	1+195.94	1+195.29



1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).



Reference Drawings			Title		
Dwg. No.			PROJECT ROADS, GENERAL, LAYOUT		
31-00053-DD-4813-1800					
Revisions					
	Name	Date	Notes		
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;">  <p><b>TAMAKOSHI V HYDROELECTRIC PROJECT</b> PROJECT DEVELOPMENT DEPARTMENT ENGINEERING SERVICES DIRECTORATE NEPAL ELECTRICITY AUTHORITY</p> </div> <div style="text-align: center;">  <p><b>LAHMEYER INTERNATIONAL</b></p> </div> <div style="text-align: center;"> <p><b>CONSULTING ENGINEERS BAD VILBEL, GERMANY</b></p> </div> </div>					
<b>TAMAKOSHI V HYDROELECTRIC PROJECT</b> <b>DETAILED ENGINEERING DESIGN</b>					
	Name	Date	DETAILED DESIGN <u>PROJECT ROADS</u> <u>ROAD TO ADIT 3</u> LONGITUDINAL PROFILE SHEET 4 OF 5  PROJECT DRAWING		
Prepared	B. Khadka	23.10.17			
Drawn	B. Khadka				
Checked	Roloff				
Approved	Dr. Moeller				
Replaces Dwg. No:					
...					
CAD- File No.:					
Scale A3: 1:1000			Dwg. No.: 31-00053-DD-4813-Q 1805 REV. —		




IP.No	CO-ORDINATES(m)		WCB (D-M-S)	DIST (m)	DEF. ANG (D-M-S)	TAN. LEN. (m)	SIMPLE CURVE DATA			CHAINAGE			
	EASTING	NORTHING					R (m)	E (m)	LC (m)	BC	MC	EC	IP
22	422186.125	3074490.000	284-49-35	14.887	34-15-25	6.164	20.000	0.928	11.958	1+204.01	1+209.99	1+215.97	1+210.17
23	422169.125	3074494.500	262-05-30	17.586	22-44-05	4.021	20.000	0.400	7.936	1+223.37	1+227.34	1+231.31	1+227.39
25	422129.531	3074489.000	288-07-58	39.974	26-02-27	4.625	20.000	0.528	9.090	1+262.64	1+267.19	1+271.73	1+267.26
26	422119.955	3074492.136	00-00-00	10.076	00-00-00	0.000	0.000	0.000	0.000	1+277.18	1+277.18	1+277.18	1+277.18


1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).



Reference Drawings			Title	
Drwg. No.			PROJECT ROADS, GENERAL, LAYOUT	
31-00053-DD-4813-1800				
Revisions				
	Name	Date	Notes	



**TAMAKOSHI V HYDROELECTRIC PROJECT**  
**PROJECT DEVELOPMENT DEPARTMENT**  
**ENGINEERING SERVICES DIRECTORATE**  
**NEPAL ELECTRICITY AUTHORITY**

 <p><b>LAHMEYER INTERNATIONAL</b></p>	<p><b>CONSULTING ENGINEERS BAD VILBEL, GERMANY</b></p>
--	--

**TAMAKOSHI V HYDROELECTRIC PROJECT**  
**DETAILED ENGINEERING DESIGN**

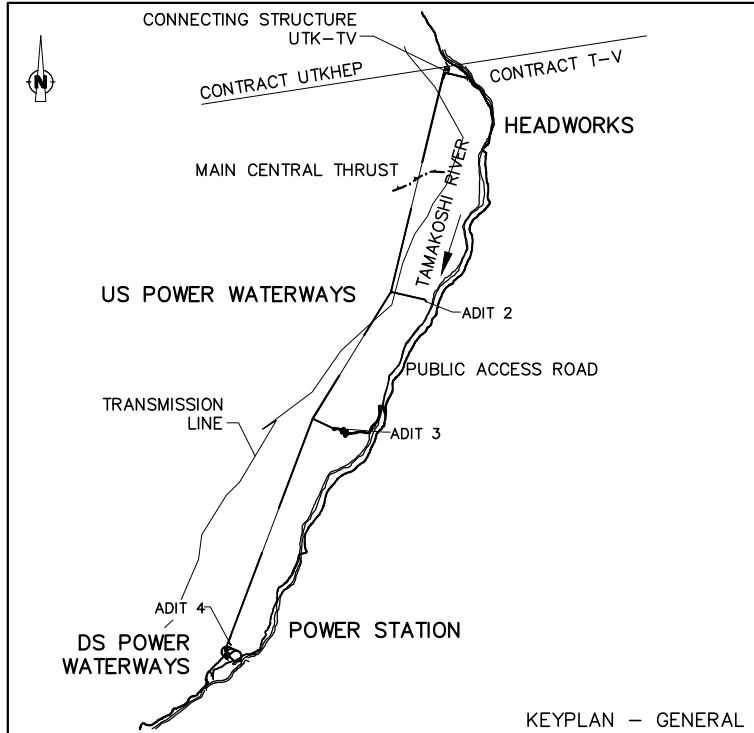
	Name	Date	DETAILED DESIGN
Prepared	B. Khadka	23.10.17	<u>PROJECT ROADS</u>  <u>ROAD TO ADIT 3</u>  <b>LONGITUDINAL PROFILE</b>  SHEET 5 OF 5
Drawn	B. Khadka		
Checked	Roloff		
Approved	Dr. Moeller		
Replaces Drwg. No:			
... <b>CAD- File No.:</b>			PROJECT DRAWING
Scale A3: 1:1000			Drwg. No.: 31-00053-DD-4813- <b>Q 1805</b>

<b>REV.</b>	<b>—</b>
-------------	----------

NOTES:

1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).

DRAFT STATUS:  
14.11.2018



Reference Drawings

Drwg. No.	Title
31-00053-DD-4813-1800	PROJECT ROADS, GENERAL, LAYOUT

Revisions	Name	Date	Notes



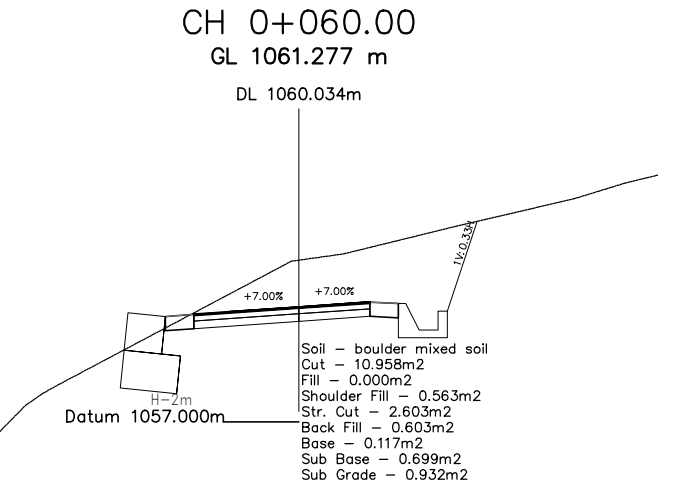
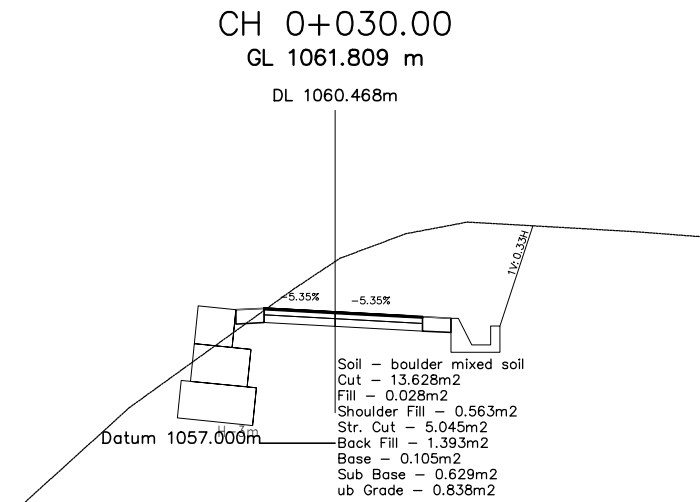
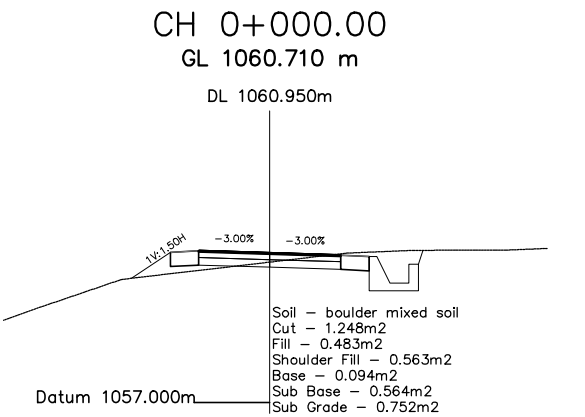
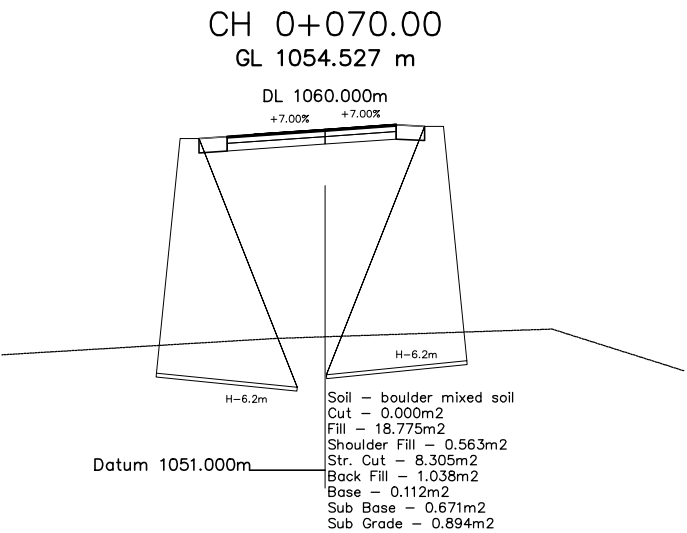
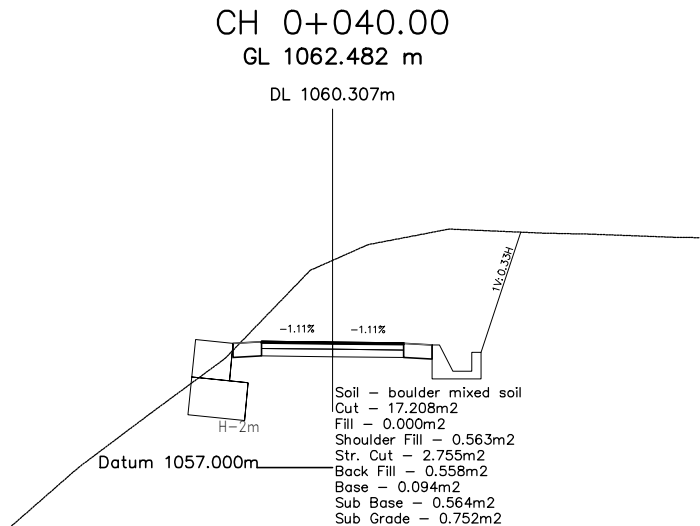
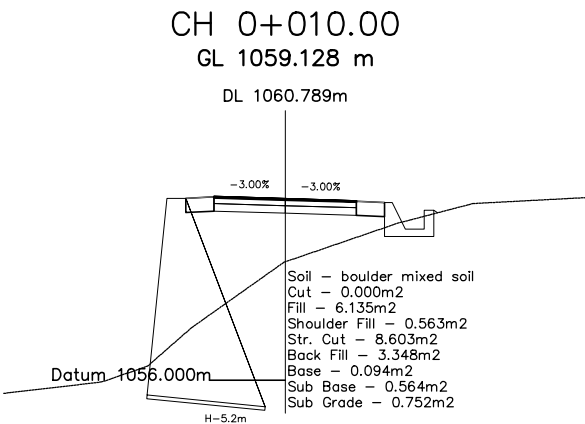
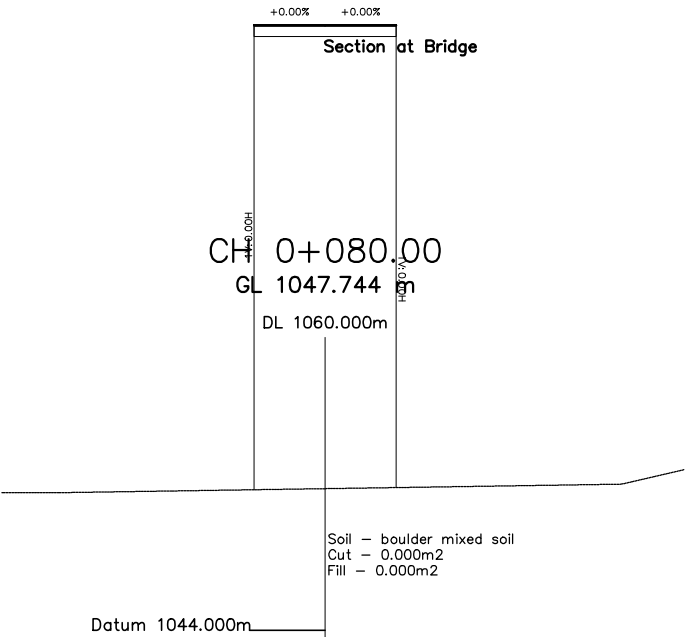
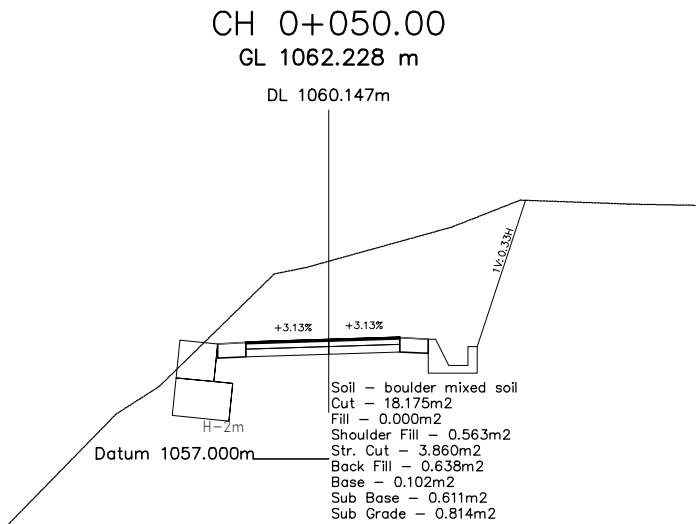
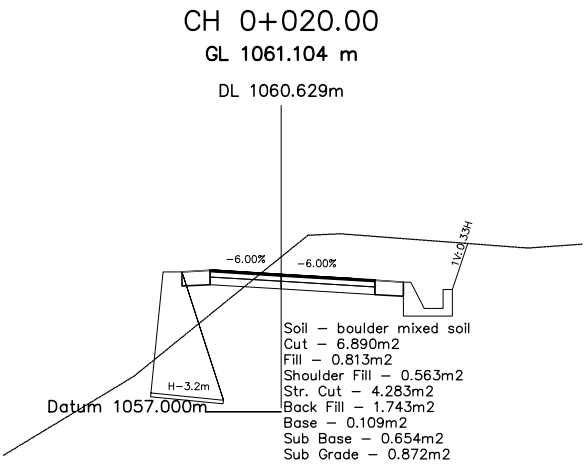
TAMAKOSHI V HYDROELECTRIC PROJECT  
PROJECT DEVELOPMENT DEPARTMENT  
ENGINEERING SERVICES DIRECTORATE  
NEPAL ELECTRICITY AUTHORITY

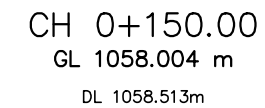
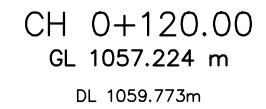
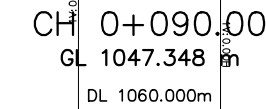
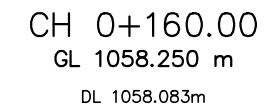
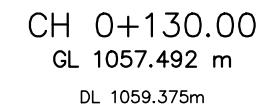
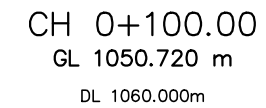
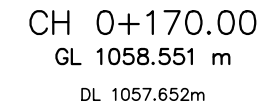
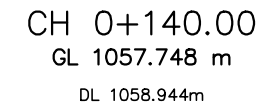
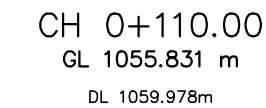


CONSULTING ENGINEERS  
BAD VILBEL, GERMANY

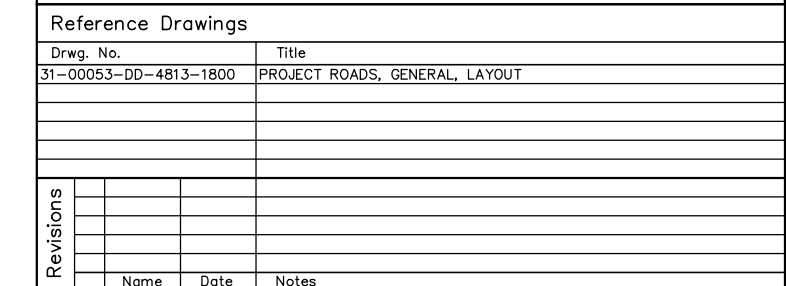
TAMAKOSHI V HYDROELECTRIC PROJECT  
DETAILED ENGINEERING DESIGN



	Name	Date	DETAILED DESIGN
Prepared	B. Khadka	23.10.17	PROJECT ROADS
Drawn	B. Khadka		ROAD TO ADIT 3
Checked	Roloff		CROSS SECTION
Approved	Dr. Moeller		CH 0+000.00-0+080.00
Replaces Drwg. No:			SHEET 1 OF 20
...			PROJECT DRAWING
CAD- File No.:			
Scale A3:	1:200		Drwg. No.: 31-00053-DD-4813- Q 1806 REV. -





- SCALE 1:200
- 
- 2 0 2 4 6 8 10 [m]

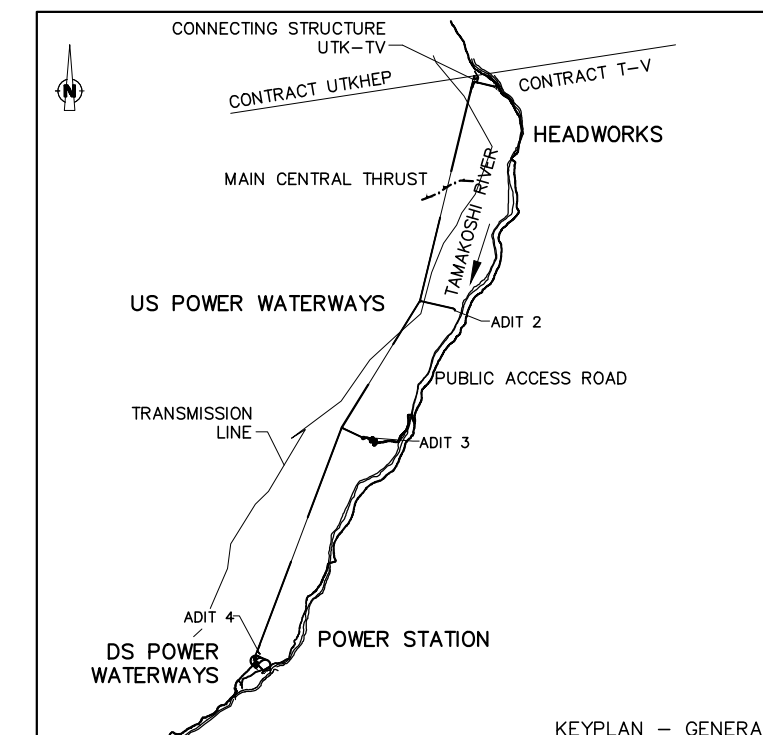


		<b>TAMAKOSHI V HYDROELECTRIC PROJECT</b> <b>PROJECT DEVELOPMENT DEPARTMENT</b> <b>ENGINEERING SERVICES DIRECTORATE</b> <b>NEPAL ELECTRICITY AUTHORITY</b>	
 <b>LAHMEYER INTERNATIONAL</b>		<b>CONSULTING ENGINEERS</b> <b>BAD VILBEL, GERMANY</b>	
<b>TAMAKOSHI V HYDROELECTRIC PROJECT</b> <b>DETAILED ENGINEERING DESIGN</b>			
	Name	Date	DETAILED DESIGN  <u>PROJECT ROADS</u>  <u>ROAD TO ADIT 3</u>  CROSS SECTION CH 0+090.00–0+170.00  SHEET 2 OF 20 PROJECT DRAWING
Prepared	B. Khadka	23.10.17	
Drawn	B. Khadka		
Checked	Roloff		
Approved	Dr. Moeller		
Replaces Drwg. No:			
...			
CAD– File No.:			
Scale A3: 1:200			Drwg. No.: 31–00053–DD–4813– <b>Q 1806</b>
			REV. –




# NOTES:

1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).



Reference Drawings				
Drwg. No.			Title	
31-00053-DD-4813-1800			PROJECT ROADS, GENERAL, LAYOUT	
Revisions				
	Name	Date	Notes	

 **TAMAKOSHI V HYDROELECTRIC PROJECT**  
PROJECT DEVELOPMENT DEPARTMENT  
ENGINEERING SERVICES DIRECTORATE  
NEPAL ELECTRICITY AUTHORITY

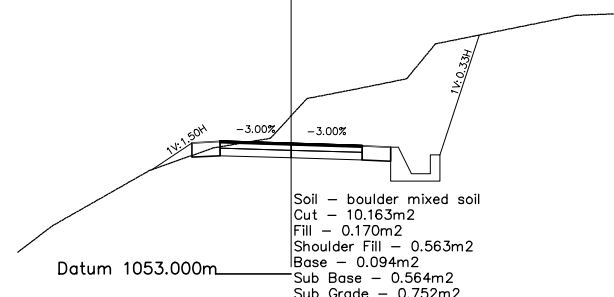
 **LAHMEYER INTERNATIONAL** CONSULTING ENGINEERS  
BAD VILBEL, GERMANY

## TAMAKOSHI V HYDROELECTRIC PROJECT DETAILED ENGINEERING DESIGN

	Name	Date	DETAILED DESIGN	
Prepared	B. Khadka	23.10.17	<u>PROJECT ROADS</u> <u>ROAD TO ADIT 3</u>  CROSS SECTION CH 0+180.00–0+260.00  SHEET 3 OF 20 PROJECT DRAWING	
Drawn	B. Khadka			
Checked	Roloff			
Approved	Dr. Moeller			
Replaces Drwg. No:				
...				
CAD– File No.:				
Scale A3: 1:200			Drwg. No.: 31–00053–DD–4813– Q 1806 REV. -	

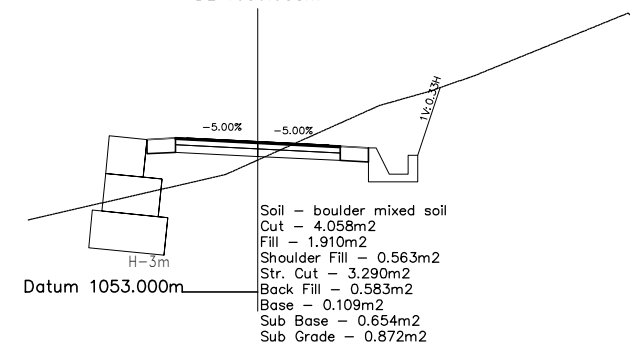
CH 0+200.00  
GL 1057.184 m

DL 1056.443m



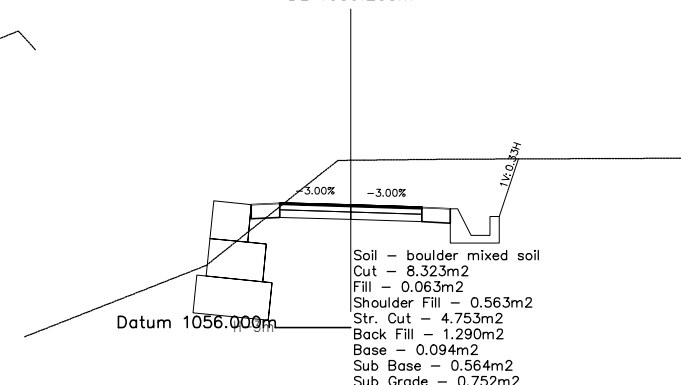
CH 0+230.00  
GL 1056.487 m

DL 1056.958m



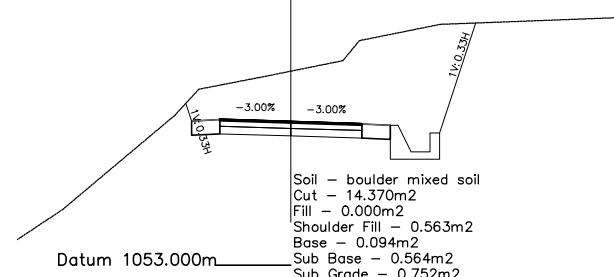
CH 0+260.00  
GL 1060.427 m

DL 1059.235m



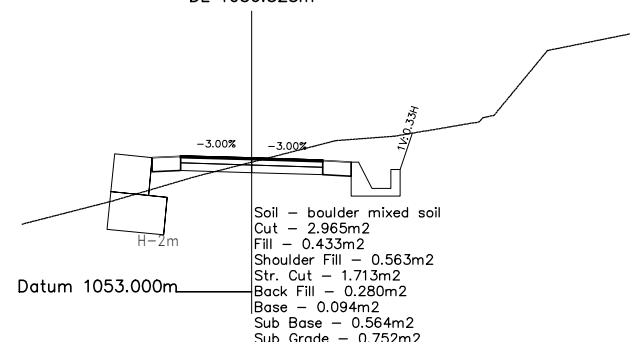
CH 0+190.00  
GL 1058.130 m

DL 1056.791m



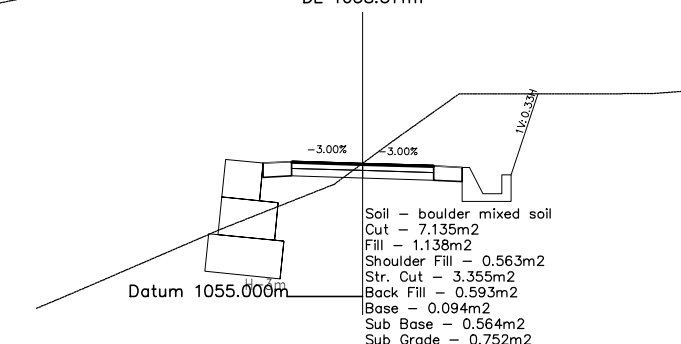
CH 0+220.00  
GL 1056.424 m

DL 1056.523m



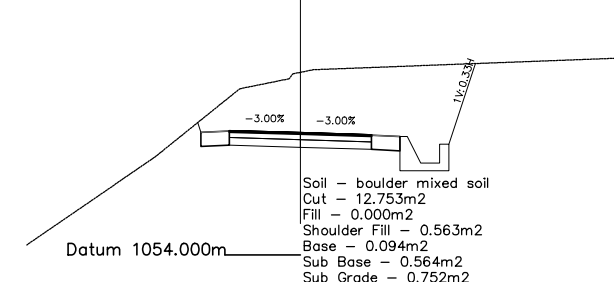
CH 0+250.00  
GL 1058.524 m

DL 1058.511m



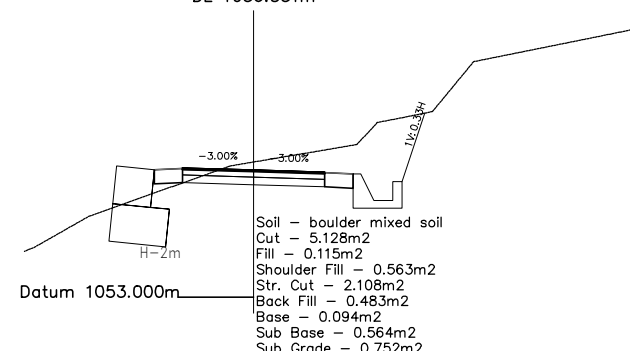
CH 0+180.00  
GL 1058.828 m

DL 1057.222m



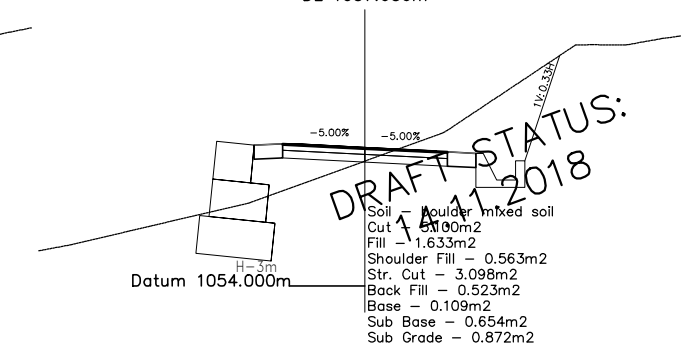
CH 0+210.00  
GL 1056.577 m

DL 1056.351m

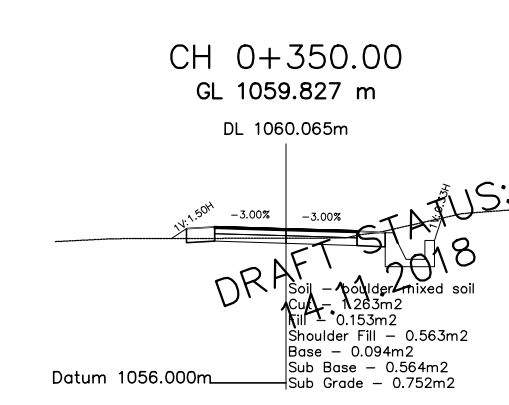
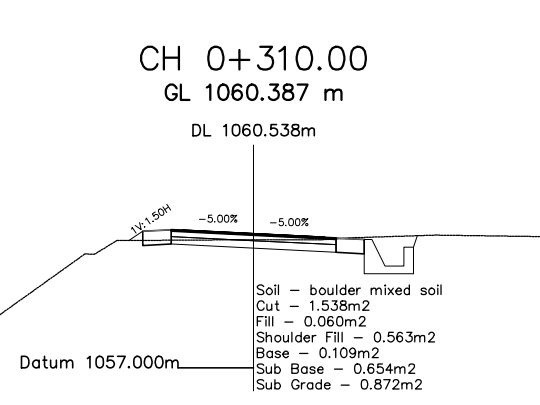
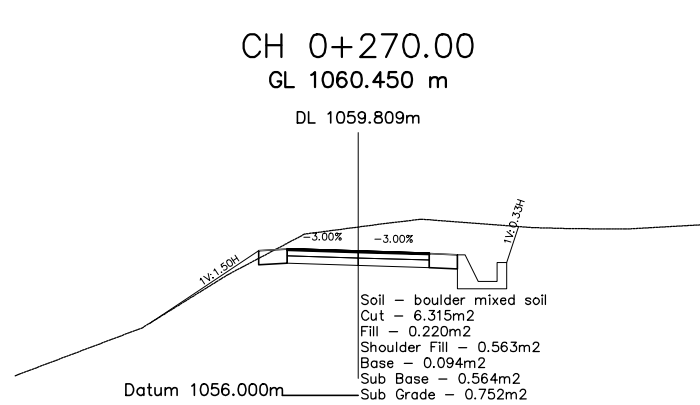
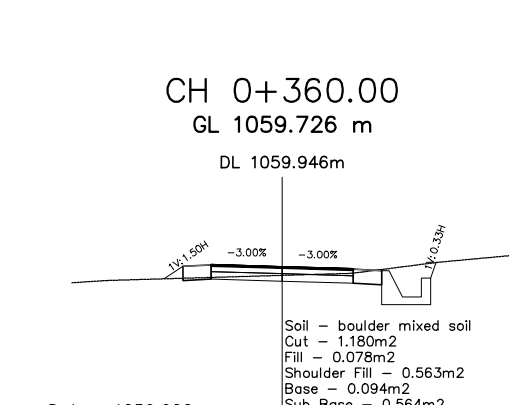
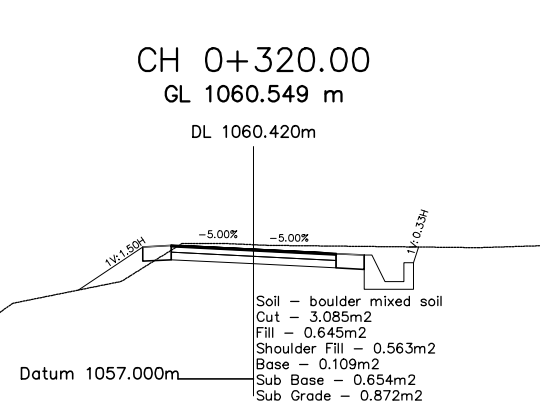
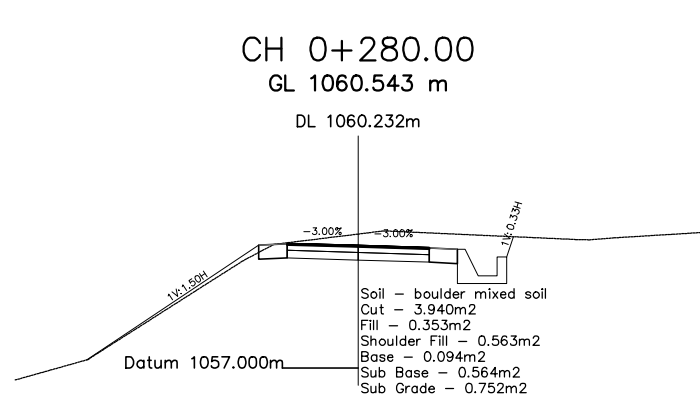
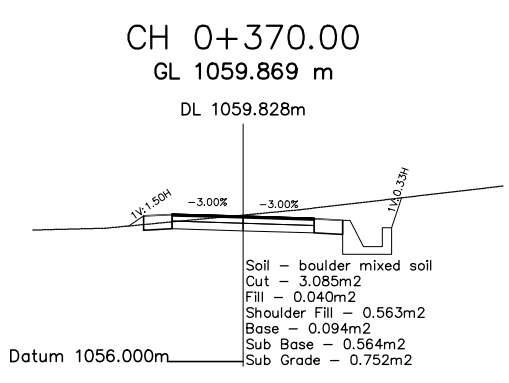
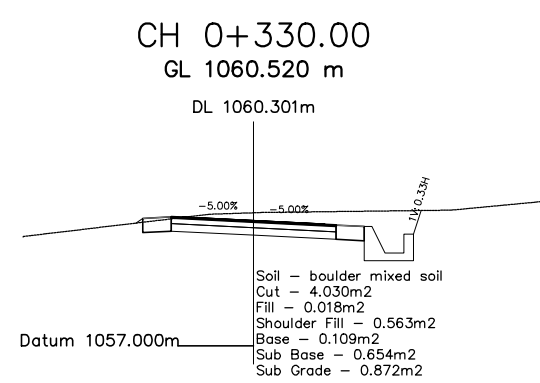
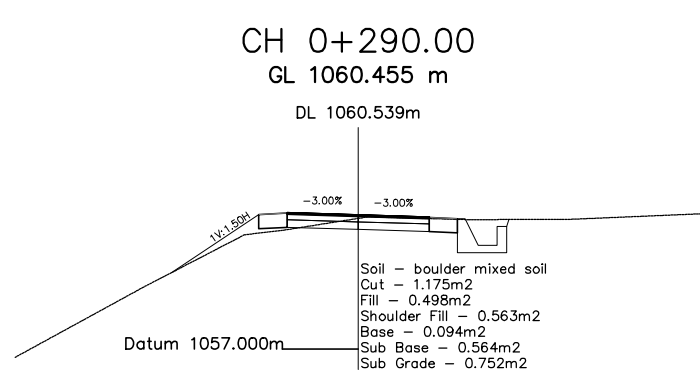
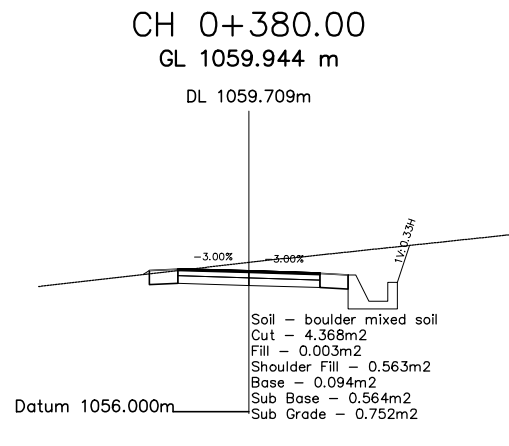
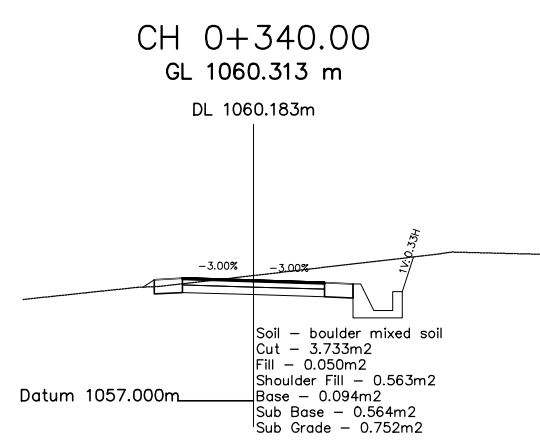
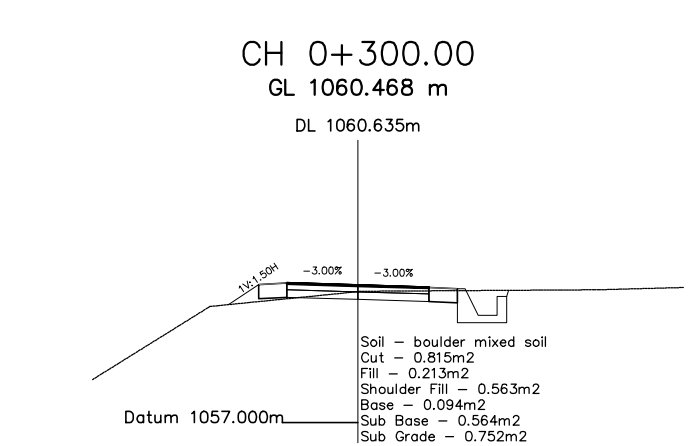


CH 0+240.00  
GL 1057.307 m

DL 1057.656m

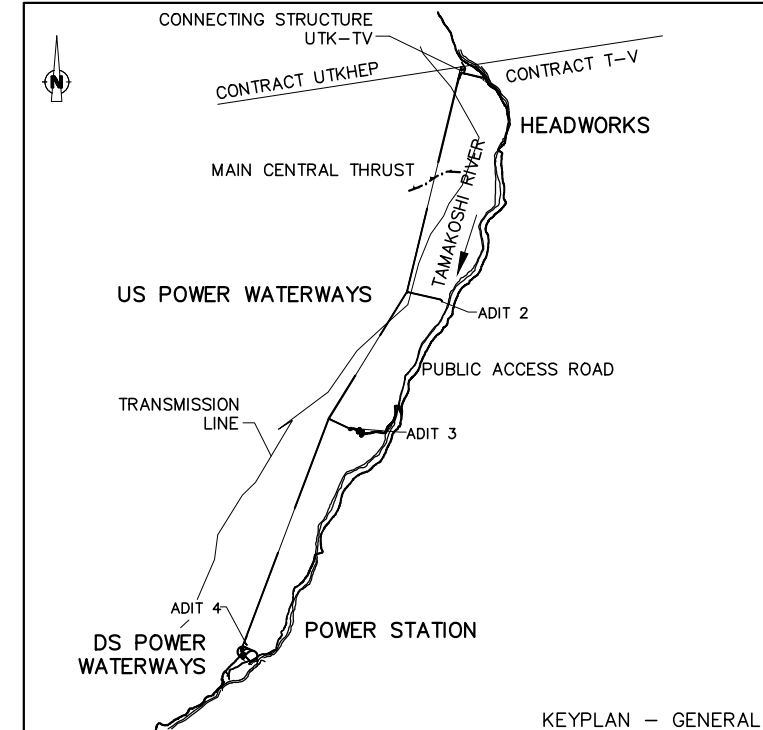


DRAFT STATUS:  
18.11.2018




NOTES:

1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).



Reference Drawings	
Drwg. No.	Title
31-00053-DD-4813-1800	PROJECT ROADS, GENERAL, LAYOUT

Revisions			
	Name	Date	Notes

 **TAMAKOSHI V HYDROELECTRIC PROJECT**  
PROJECT DEVELOPMENT DEPARTMENT  
ENGINEERING SERVICES DIRECTORATE  
NEPAL ELECTRICITY AUTHORITY

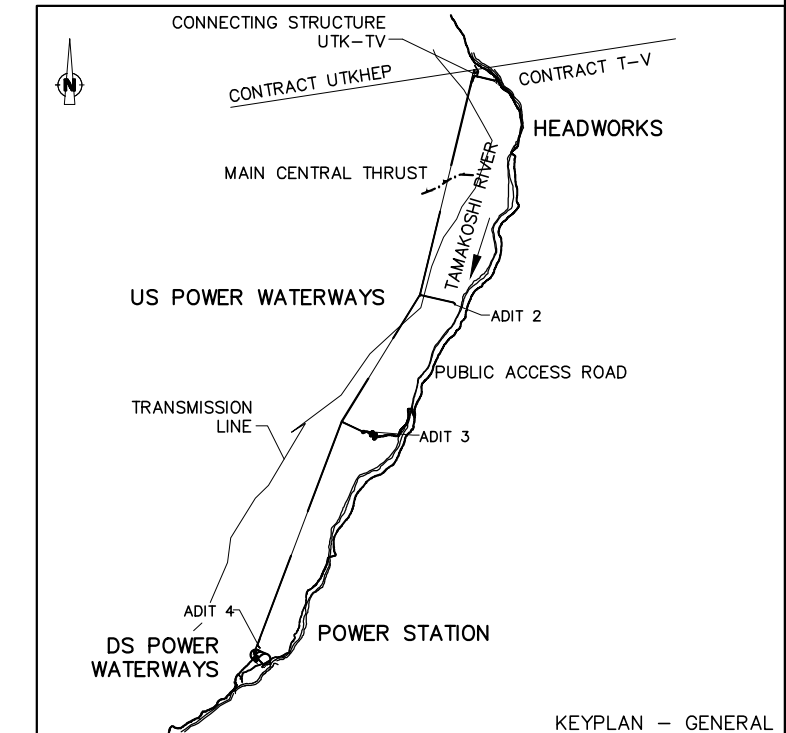
 **LAHMEYER INTERNATIONAL** CONSULTING ENGINEERS  
BAD VILBEL, GERMANY

**TAMAKOSHI V HYDROELECTRIC PROJECT**  
**DETAILED ENGINEERING DESIGN**



	Name	Date	DETAILED DESIGN
Prepared	B. Khadka	23.10.17	<b>PROJECT ROADS</b> <b>ROAD TO ADIT 3</b> <b>CROSS SECTION</b> <b>CH 0+270.00-0+380.00</b> SHEET 4 OF 20 PROJECT DRAWING
Drawn	B. Khadka		
Checked	Roloff		
Approved	Dr. Moeller		
Replaces Drwg. No:			
CAD- File No.:			
Scale A3:	1:200		Drwg. No.: 31-00053-DD-4813- Q 1806 REV. -



1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).

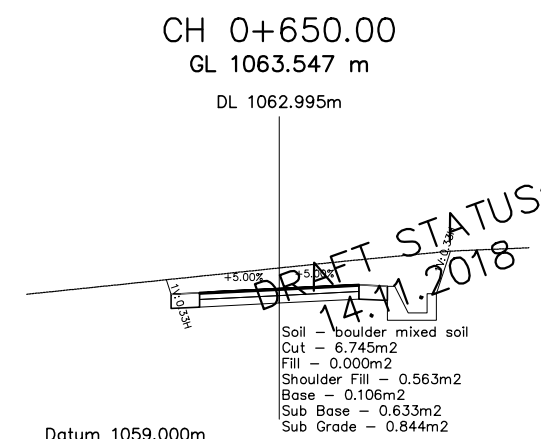
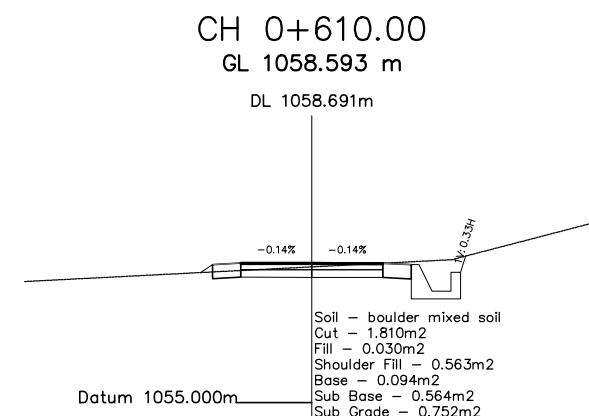
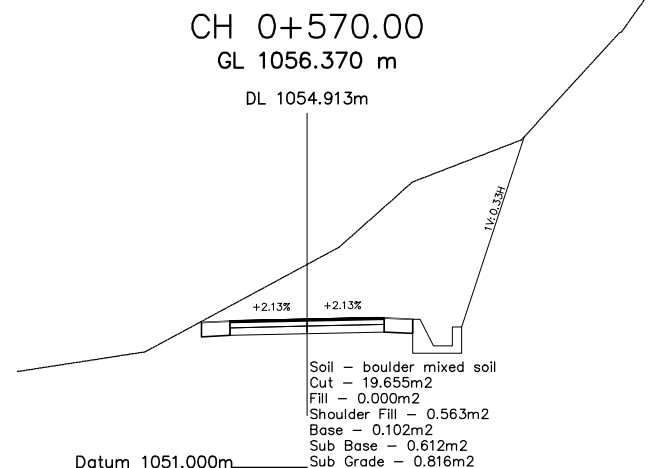
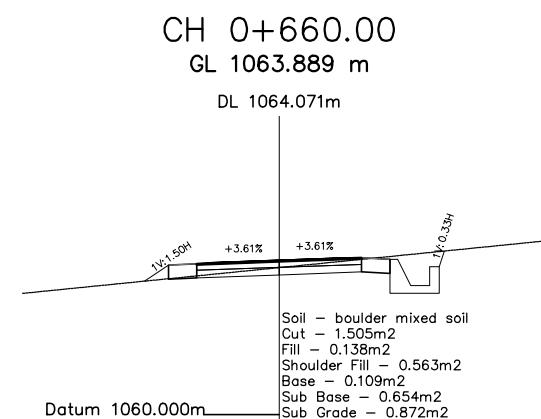
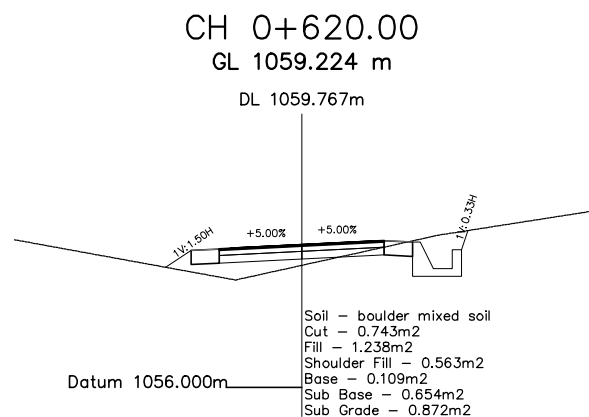
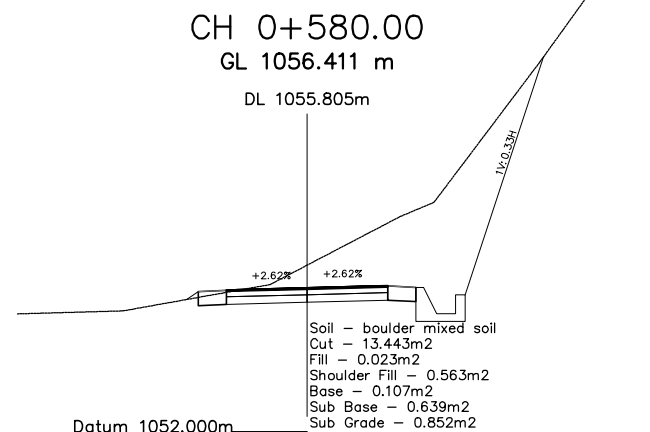
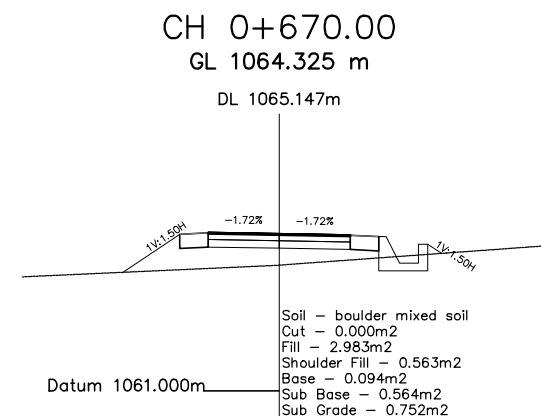
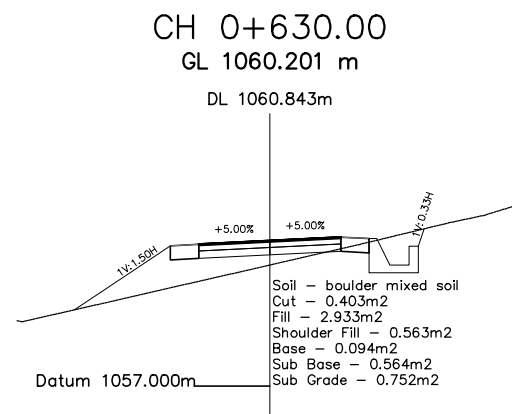
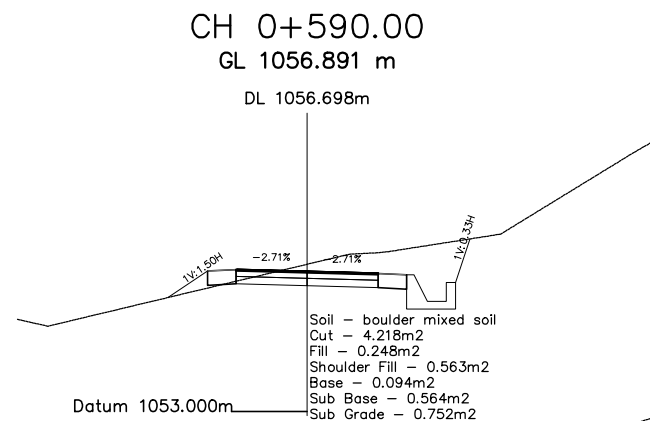
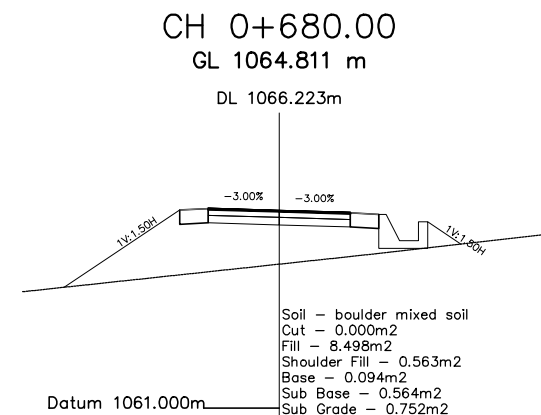
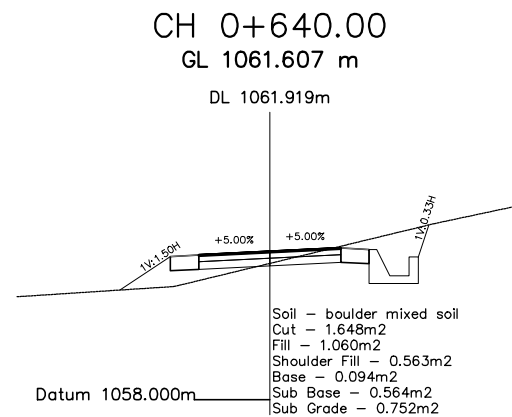
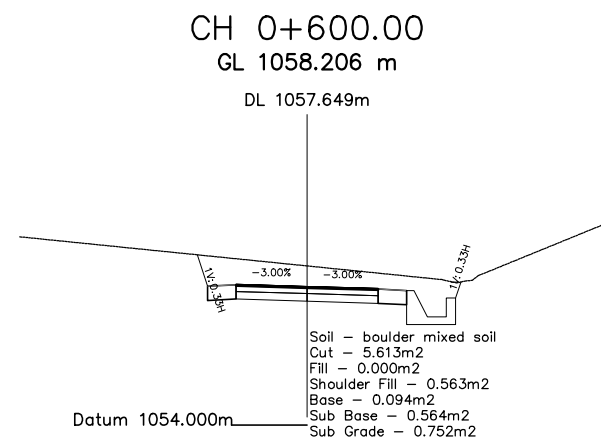


Reference Drawings				
Drwg. No.			Title	
31-00053-DD-4813-1800			PROJECT ROADS, GENERAL, LAYOUT	
Revisions				
	Name	Date	Notes	

 <p>TAMAKOSHI V HYDROELECTRIC PROJECT PROJECT DEVELOPMENT DEPARTMENT ENGINEERING SERVICES DIRECTORATE NEPAL ELECTRICITY AUTHORITY</p>	
 <p>LAHMEYER INTERNATIONAL</p>	<p>CONSULTING ENGINEERS BAD VILBEL, GERMANY</p>

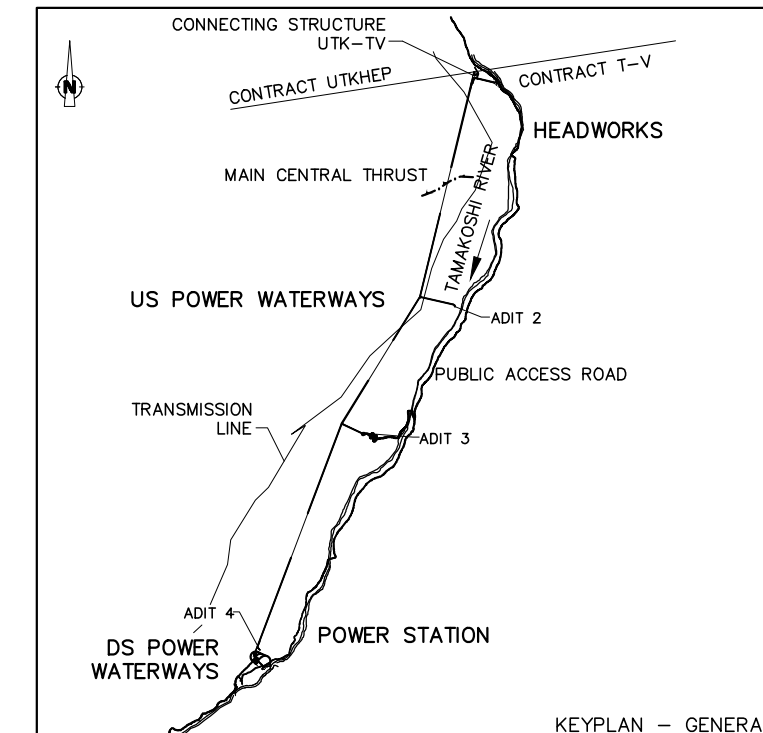
<h1 style="text-align: center;">TAMAKOSHI V HYDROELECTRIC PROJECT</h1> <h2 style="text-align: center;">DETAILED ENGINEERING DESIGN</h2>					
	Name	Date	DETAILED DESIGN <u>PROJECT ROADS</u> <u>ROAD TO ADIT 3</u> CROSS SECTION CH 0+500.00–0+560.00 SHEET 6 OF 20 PROJECT DRAWING		
Prepared	B. Khadka	23.10.17			
Drawn	B. Khadka				
Checked	Roloff				
Approved	Dr. Moeller				
Replaces Drwg. No:					
...					
CAD- File No.:					
Scale A3:	1:200	Drwg. No.: 31–0005–DD–4813–	Q 1806	REV.	—






## NOTES:

1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).



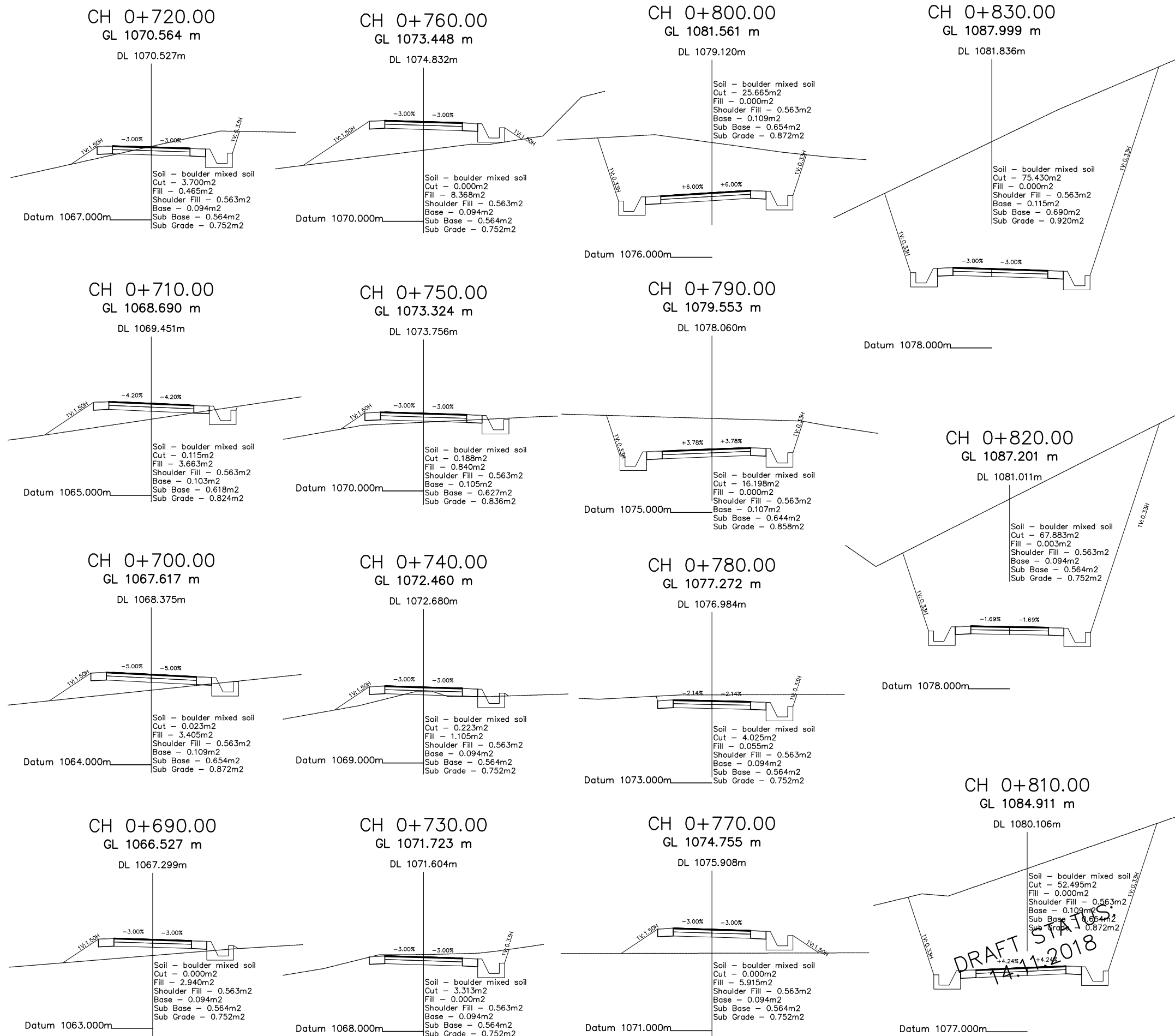
Reference Drawings				
Drwg. No.			Title	
31-00053-DD-4813-1800			PROJECT ROADS, GENERAL, LAYOUT	
Revisions				
	Name	Date	Notes	

 **TAMAKOSHI V HYDROELECTRIC PROJECT**  
PROJECT DEVELOPMENT DEPARTMENT  
ENGINEERING SERVICES DIRECTORATE  
NEPAL ELECTRICITY AUTHORITY

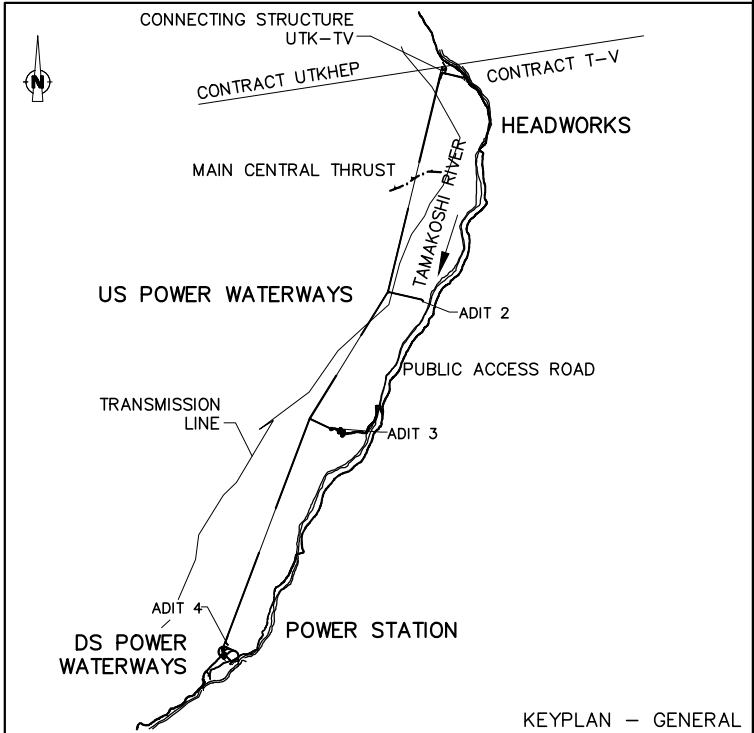
 **LAHMEYER INTERNATIONAL** CONSULTING ENGINEERS  
BAD VILBEL, GERMANY

## TAMAKOSHI V HYDROELECTRIC PROJECT DETAILED ENGINEERING DESIGN

	Name	Date	DETAILED DESIGN
Prepared	B. Khadka	23.10.17	<b>PROJECT ROADS</b> <b>ROAD TO ADIT 3</b> <b>CROSS SECTION</b> <b>CH 0+570.00-0+680.00</b> SHEET 7 OF 20 PROJECT DRAWING
Drawn	B. Khadka		
Checked	Roloff		
Approved	Dr. Moeller		
Replaces Drwg. No:			
CAD- File No.:			
Scale A3:	1:200		Drwg. No.: 31-00053-DD-4813- Q 1806 REV. -



- NOTES:**
1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
  2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
  3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).



Reference Drawings				
Drwg. No.			Title	
31-00053-DD-4813-1800			PROJECT ROADS, GENERAL, LAYOUT	
Revisions				
	Name	Date	Notes	

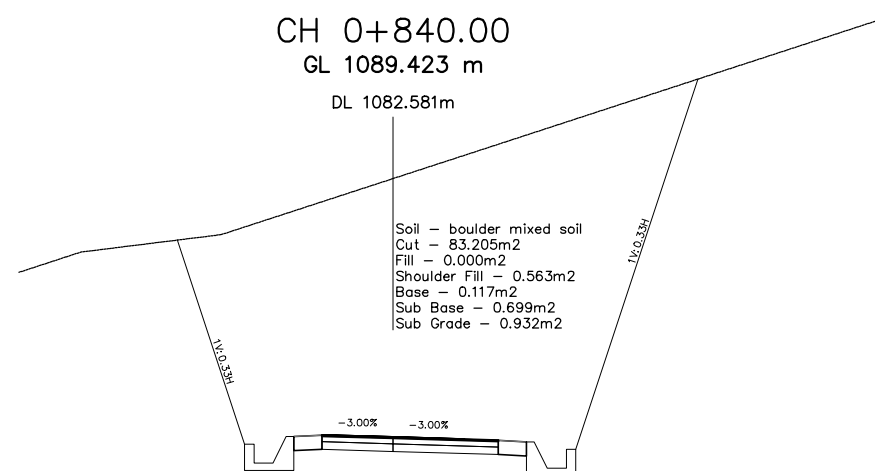
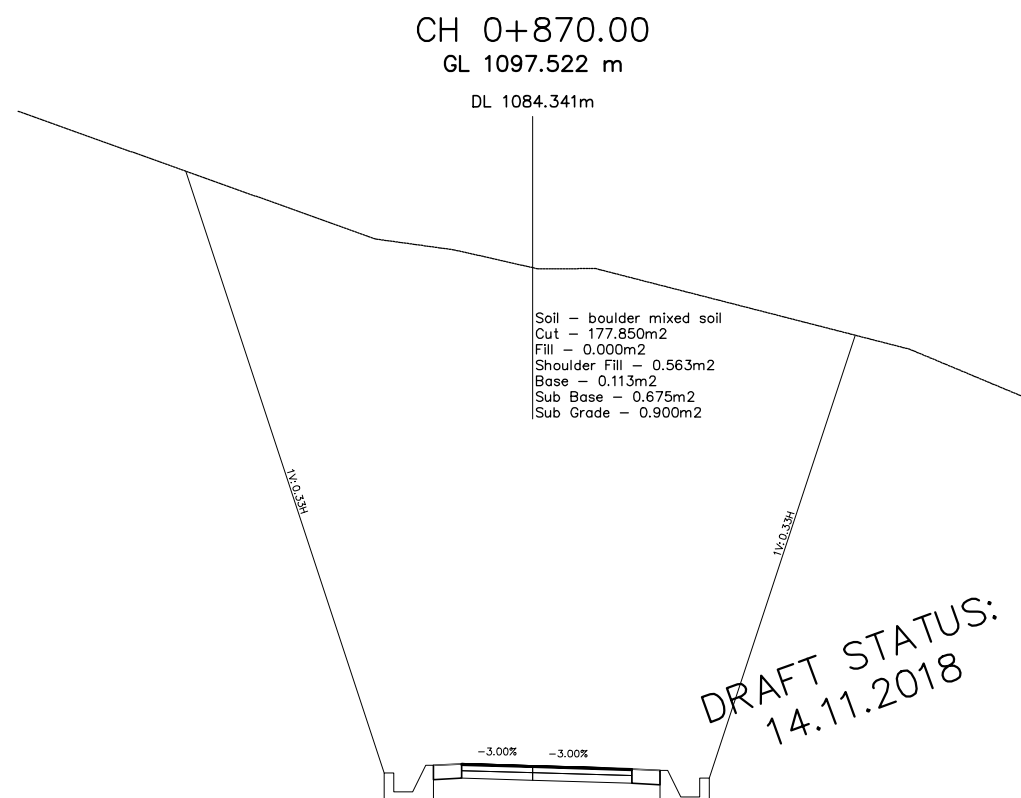
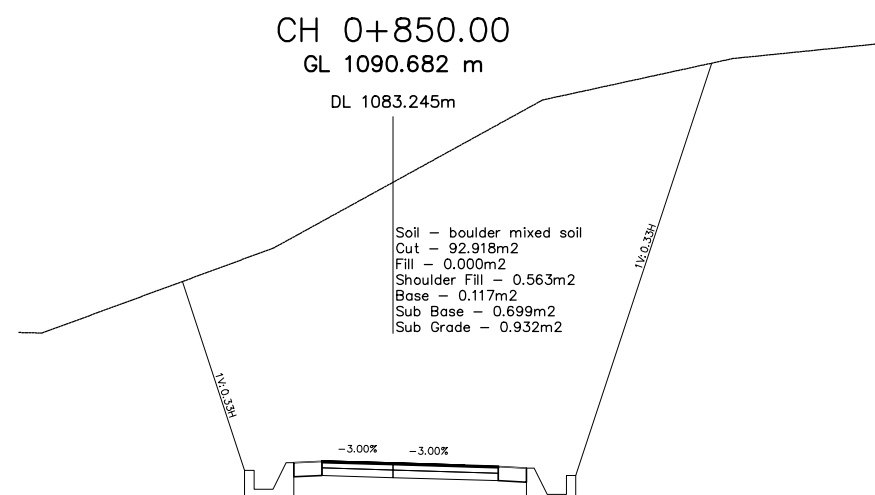
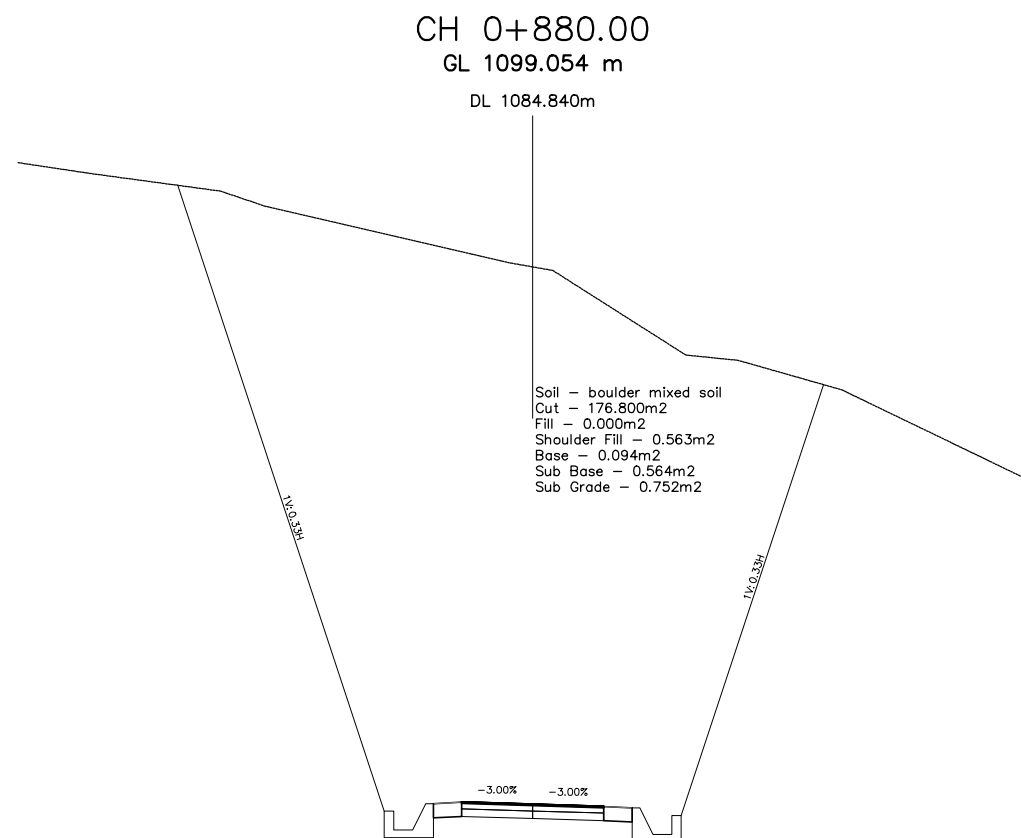
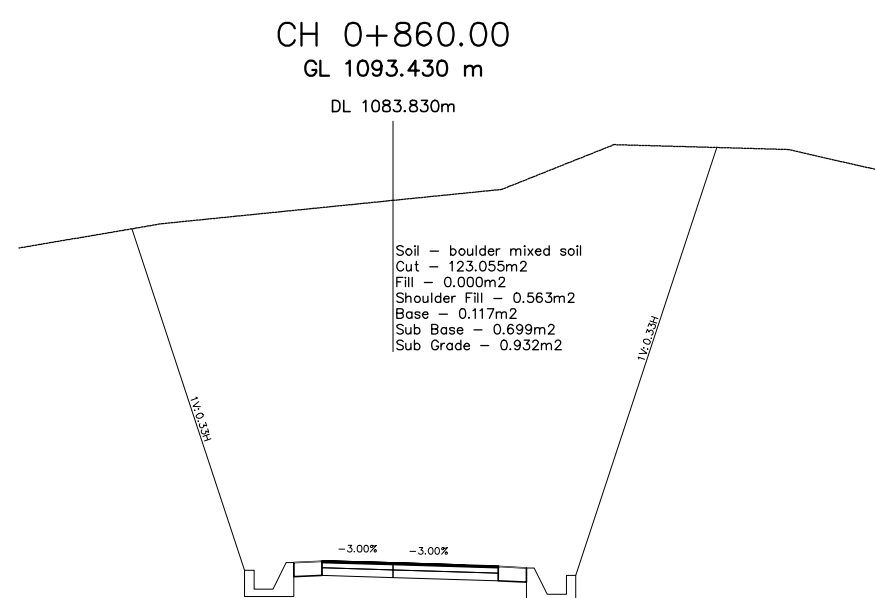
**TAMAKOSHI V HYDROELECTRIC PROJECT**  
PROJECT DEVELOPMENT DEPARTMENT  
ENGINEERING SERVICES DIRECTORATE  
NEPAL ELECTRICITY AUTHORITY

**LAHMEYER INTERNATIONAL**

CONSULTING ENGINEERS  
BAD VILBEL, GERMANY

**TAMAKOSHI V HYDROELECTRIC PROJECT**  
**DETAILED ENGINEERING DESIGN**

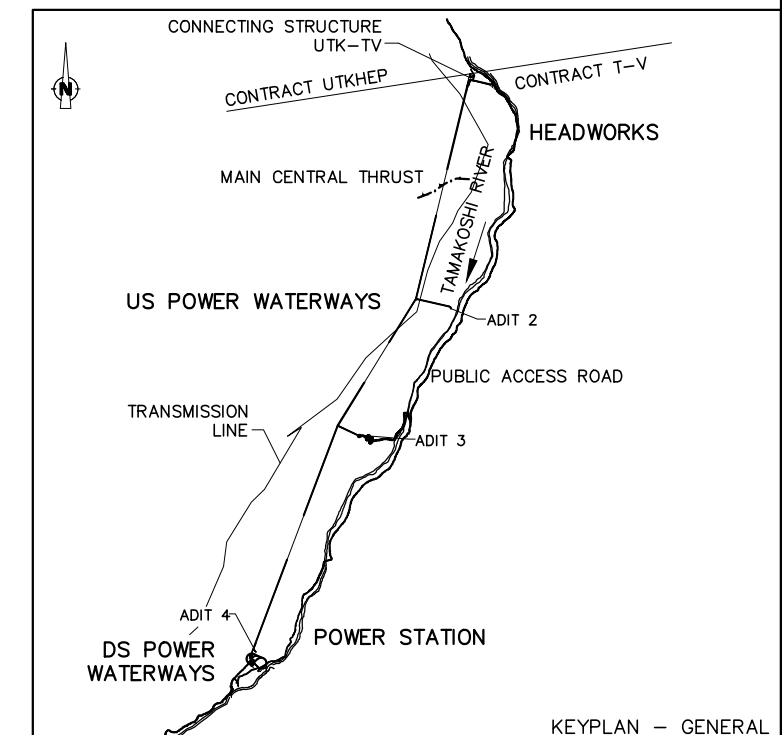
	Name	Date	DETAILED DESIGN
Prepared	B. Khadka	23.10.17	<b>PROJECT ROADS</b> <b>ROAD TO ADIT 3</b> <b>CROSS SECTION</b> <b>CH 0+690.00-0+830.00</b> SHEET 8 OF 20 PROJECT DRAWING
Drawn	B. Khadka		
Checked	Roloff		
Approved	Dr. Moeller		
Replaces Drwg. No:			
CAD- File No.:			
Scale A3:	1:200	Drwg. No.: 31-00053-DD-4813- Q 1806	REV. -



DRAFT STATUS:  
14.11.2018

- NOTES:

1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).



Reference Drawings	
Drwg. No.	Title
31-00053-DD-4813-1800	PROJECT ROADS, GENERAL, LAYOUT

Revisions				
	Name	Date	Notes	



TAMAKOSHI V HYDROELECTRIC PROJECT  
PROJECT DEVELOPMENT DEPARTMENT  
ENGINEERING SERVICES DIRECTORATE  
NEPAL ELECTRICITY AUTHORITY



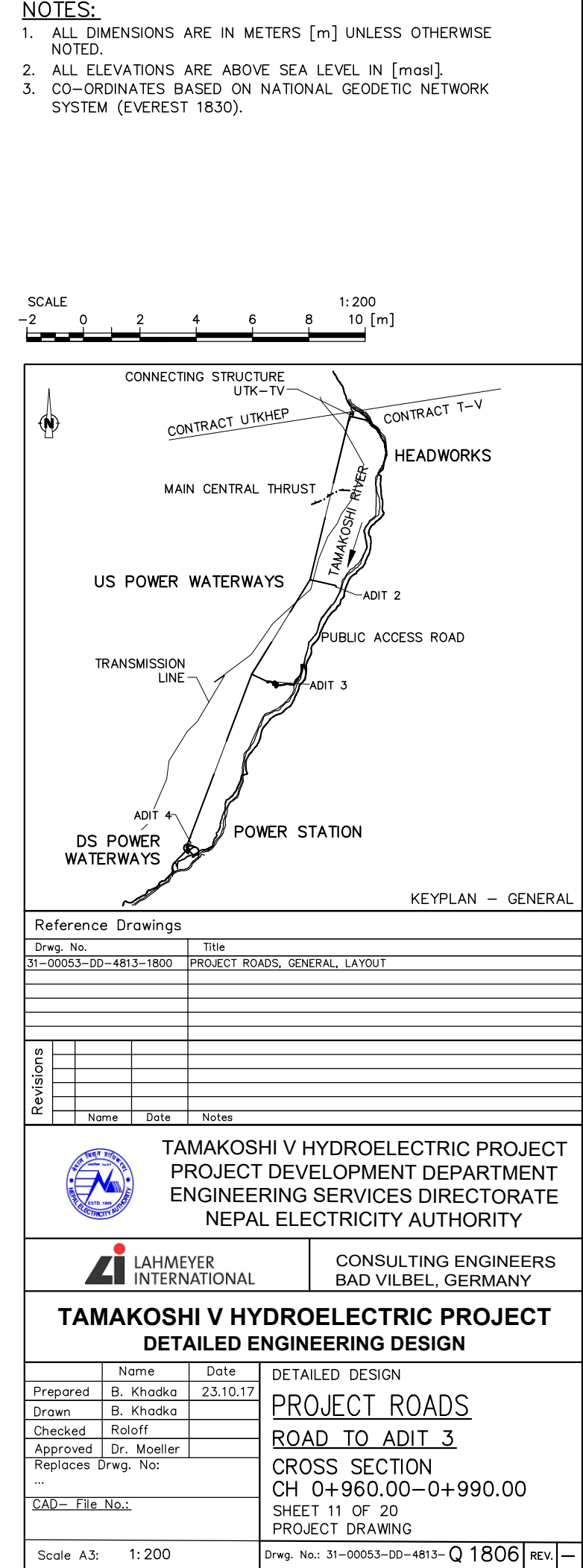
CONSULTING ENGINEERS  
BAD VILBEL, GERMANY

## TAMAKOSHI V HYDROELECTRIC PROJECT DETAILED ENGINEERING DESIGN

	Name	Date	DETAILED DESIGN <u>PROJECT ROADS</u> <u>ROAD TO ADIT 3</u> CROSS SECTION CH 0+840.00–0+880.00 SHEET 9 OF 20 PROJECT DRAWING		
Prepared	B. Khadka	23.10.17			
Drawn	B. Khadka				
Checked	Roloff				
Approved	Dr. Moeller				
Replaces Drwg. No: ...					
<u>CAD— File No.:</u>					
Scale A3:	1:200	Drwg. No.: 31–00053–DD–4813–	Q 1806	REV.	—







CH 1+010.00

GL 1104.720 m

DL 1092.665m

Soil – boulder mixed soil  
Cut – 151.458m<sup>2</sup>  
Fill – 0.003m<sup>2</sup>  
Shoulder Fill – 0.563m<sup>2</sup>  
Base – 0.094m<sup>2</sup>  
Sub Base – 0.564m<sup>2</sup>  
Sub Grade – 0.752m<sup>2</sup>

Datum 1089.000m

CH 1+030.00

GL 1103.436 m

DL 1094.076m

Soil – boulder mixed soil  
Cut – 136.370m<sup>2</sup>  
Fill – 0.000m<sup>2</sup>  
Shoulder Fill – 0.563m<sup>2</sup>  
Base – 0.117m<sup>2</sup>  
Sub Base – 0.699m<sup>2</sup>  
Sub Grade – 0.932m<sup>2</sup>

Datum 1091.000m

CH 1+000.00

GL 1104.165 m

DL 1091.837m

Soil – boulder mixed soil  
Cut – 156.133m<sup>2</sup>  
Fill – 0.000m<sup>2</sup>  
Shoulder Fill – 0.563m<sup>2</sup>  
Base – 0.094m<sup>2</sup>  
Sub Base – 0.564m<sup>2</sup>  
Sub Grade – 0.752m<sup>2</sup>

Datum 1088.000m

CH 1+020.00

GL 1106.723 m

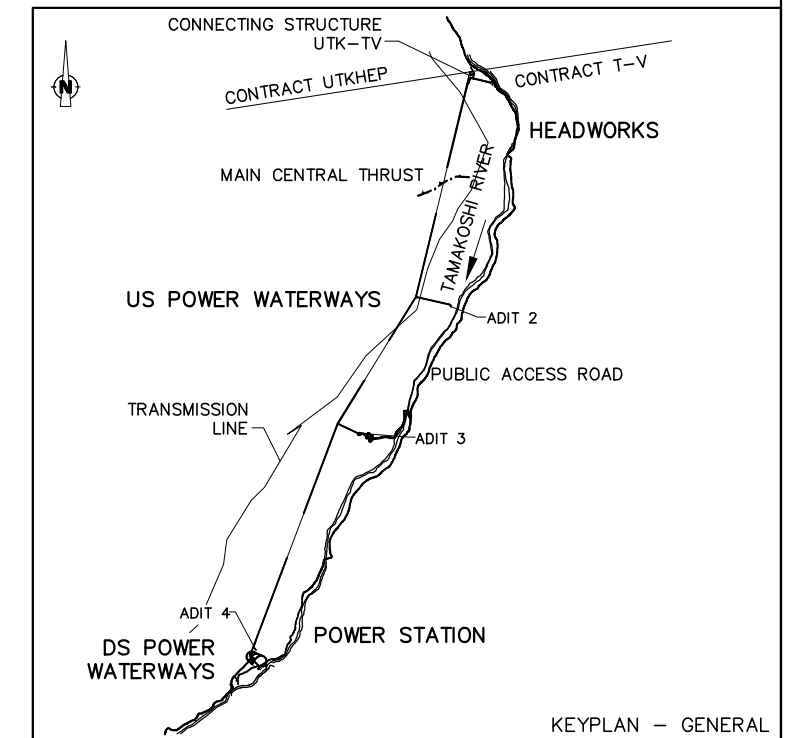
DL 1093.411m

Soil – boulder mixed soil  
Cut – 177.908m<sup>2</sup>  
Fill – 0.000m<sup>2</sup>  
Shoulder Fill – 0.563m<sup>2</sup>  
Base – 0.113m<sup>2</sup>  
Sub Base – 0.675m<sup>2</sup>  
Sub Grade – 0.900m<sup>2</sup>

Datum 1090.000m

### NOTES:

1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).



### Reference Drawings

Drwg. No.	Title
31-00053-DD-4813-1800	PROJECT ROADS, GENERAL, LAYOUT

Revisions	Name	Date	Notes



**TAMAKOSHI V HYDROELECTRIC PROJECT**  
PROJECT DEVELOPMENT DEPARTMENT  
ENGINEERING SERVICES DIRECTORATE  
NEPAL ELECTRICITY AUTHORITY



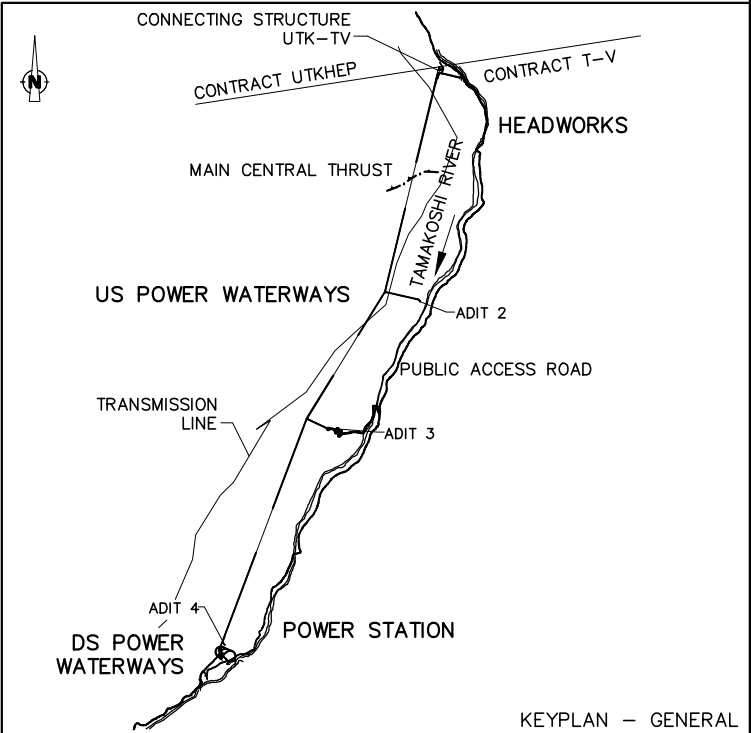
CONSULTING ENGINEERS  
BAD VILBEL, GERMANY

### TAMAKOSHI V HYDROELECTRIC PROJECT DETAILED ENGINEERING DESIGN

Prepared	B. Khadka	23.10.17	DETAILED DESIGN
Drawn	B. Khadka		PROJECT ROADS
Checked	Roloff		ROAD TO ADIT 3
Approved	Dr. Moeller		CROSS SECTION
Replaces Drwg. No:			CH 1+000.00-1+030.00
...			SHEET 12 OF 20
CAD- File No.:			PROJECT DRAWING
Scale A3:	1:200		Drwg. No.: 31-00053-DD-4813- Q 1806
			REV. —

NOTES:

1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).



Reference Drawings

Drwg. No.	Title
31-00053-DD-4813-1800	PROJECT ROADS, GENERAL, LAYOUT

Revisions

No.	Name	Date	Notes



TAMAKOSHI V HYDROELECTRIC PROJECT  
PROJECT DEVELOPMENT DEPARTMENT  
ENGINEERING SERVICES DIRECTORATE  
NEPAL ELECTRICITY AUTHORITY



CONSULTING ENGINEERS  
BAD VILBEL, GERMANY

TAMAKOSHI V HYDROELECTRIC PROJECT  
DETAILED ENGINEERING DESIGN

Name	Date	DETAILLED DESIGN
Prepared B. Khadka	23.10.17	PROJECT ROADS
Drawn B. Khadka		ROAD TO ADIT 3
Checked Roloff		CROSS SECTION
Approved Dr. Moeller		CH 1+040.00-1+060.00
Replaces Drwg. No:		SHEET 13 OF 20
...		PROJECT DRAWING
CAD- File No.:		
Scale A3: 1:200	Drwg. No.: 31-00053-DD-4813- Q 1806	REV. -

CH 1+050.00  
GL 1109.956 m

DL 1095.250m

Soil - boulder mixed soil  
Cut - 211.130m<sup>2</sup>  
Fill - 0.000m<sup>2</sup>  
Shoulder Fill - 0.563m<sup>2</sup>  
Base - 0.117m<sup>2</sup>  
Sub Base - 0.699m<sup>2</sup>  
Sub Grade - 0.932m<sup>2</sup>

Datum 1092.000m

CH 1+060.00  
GL 1118.932 m

DL 1095.961m

Soil - boulder mixed soil  
Cut - 371.343m<sup>2</sup>  
Fill - 0.010m<sup>2</sup>  
Shoulder Fill - 0.563m<sup>2</sup>  
Base - 0.114m<sup>2</sup>  
Sub Base - 0.686m<sup>2</sup>  
Sub Grade - 0.914m<sup>2</sup>

Datum 1092.000m

CH 1+040.00  
GL 1100.861 m

DL 1094.660m

Soil - boulder mixed soil  
Cut - 103.275m<sup>2</sup>  
Fill - 0.003m<sup>2</sup>  
Shoulder Fill - 0.563m<sup>2</sup>  
Base - 0.117m<sup>2</sup>  
Sub Base - 0.699m<sup>2</sup>  
Sub Grade - 0.932m<sup>2</sup>

Datum 1091.000m

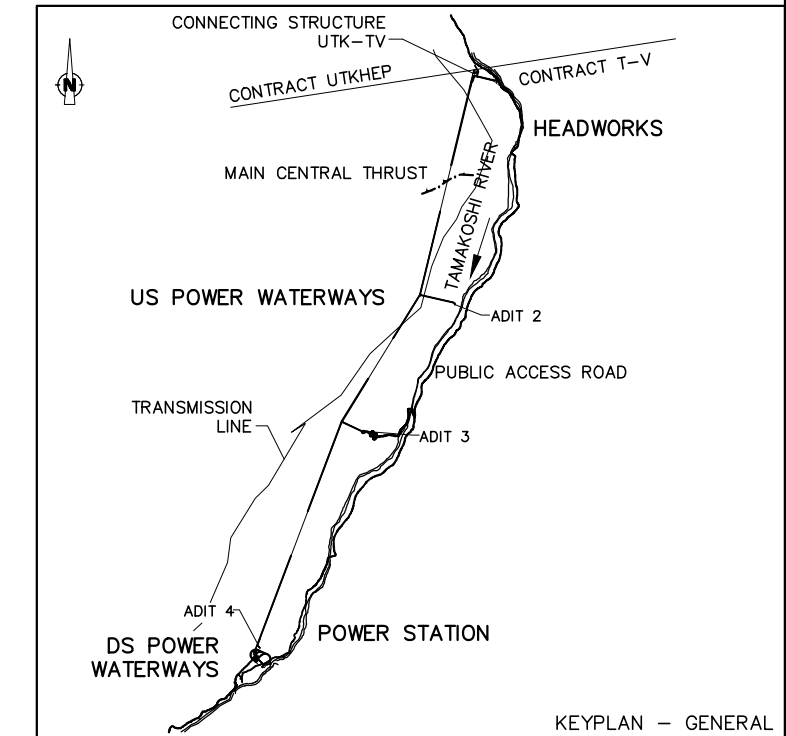
DRAFT STATUS:  
14.11.2018







	Name	Date	DETAILED DESIGN <u>PROJECT ROADS</u> <u>ROAD TO ADIT 3</u> CROSS SECTION CH 1+100.00-1+120.00 SHEET 15 OF 20 PROJECT DRAWING
Prepared	B. Khadka	23.10.17	
Drawn	B. Khadka		
Checked	Roloff		
Approved	Dr. Moeller		
Replaces Dwg. No:			
...			
CAD- File No.:			
Scale A3:	1:200	Dwg. No. 31-00053-DD-4813-Q 1806	REV. —

1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).



Reference Drawings				
Drwg. No.			Title	
31-00053-DD-4813-1800			PROJECT ROADS, GENERAL, LAYOUT	
Revisions				
	Name	Date	Notes	

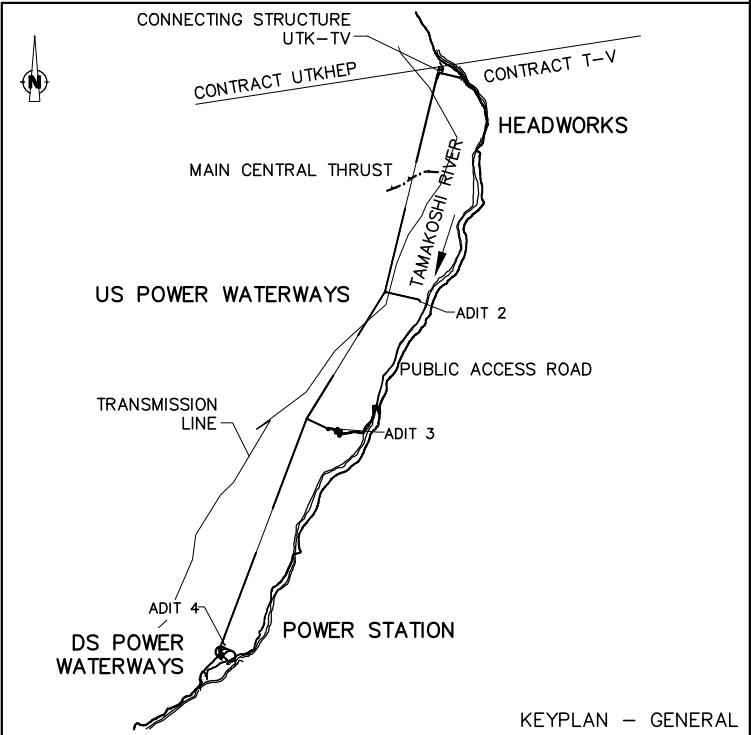
	TAMAKOSHI V HYDROELECTRIC PROJECT PROJECT DEVELOPMENT DEPARTMENT ENGINEERING SERVICES DIRECTORATE NEPAL ELECTRICITY AUTHORITY		
---	--	--	--

	LAHMEYER INTERNATIONAL	CONSULTING ENGINEERS BAD VILBEL, GERMANY
---	---------------------------	---

TAMAKOSHI V HYDROELECTRIC PROJECT DETAILED ENGINEERING DESIGN			
	Name	Date	DETAILED DESIGN  <u>PROJECT ROADS</u>  <u>ROAD TO ADIT 3</u>  CROSS SECTION CH 1+130.00-1+140.00 SHEET 16 OF 20 PROJECT DRAWING
Prepared	B. Khadka	23.10.17	
Drawn	B. Khadka		
Checked	Roloff		
Approved	Dr. Moeller		
Replaces Drwg. No: ...			
CAD- File No.:			
Scale A3: 1:200			Drwg. No.: 31-00053-DD-4813-Q 1806 REV. —

NOTES:

1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).



Reference Drawings

Drwg. No.	Title
31-00053-DD-4813-1800	PROJECT ROADS, GENERAL, LAYOUT

Revisions	Name	Date	Notes



TAMAKOSHI V HYDROELECTRIC PROJECT  
PROJECT DEVELOPMENT DEPARTMENT  
ENGINEERING SERVICES DIRECTORATE  
NEPAL ELECTRICITY AUTHORITY



CONSULTING ENGINEERS  
BAD VILBEL, GERMANY

TAMAKOSHI V HYDROELECTRIC PROJECT  
DETAILED ENGINEERING DESIGN

	Name	Date	DETAILED DESIGN
Prepared	B. Khadka	23.10.17	PROJECT ROADS
Drawn	B. Khadka		ROAD TO ADIT 3
Checked	Roloff		CROSS SECTION
Approved	Dr. Moeller		CH 1+150.00-1+160.00
Replaces Drwg. No:			SHEET 17 OF 20
...			PROJECT DRAWING
CAD- File No.:			
Scale A3:	1:200	Drwg. No.: 31-00053-DD-4813- Q 1806	REV. -

CH 1+150.00  
GL 1127.942 m  
DL 1103.973m

Soil - boulder mixed soil  
Cut - 396.923m<sup>2</sup>  
Fill - 0.000m<sup>2</sup>  
Shoulder Fill - 0.563m<sup>2</sup>  
Base - 0.096m<sup>2</sup>  
Sub Base - 0.576m<sup>2</sup>  
Sub Grade - 0.768m<sup>2</sup>

CH 1+160.00  
GL 1128.575 m  
DL 1104.761m

Soil - boulder mixed soil  
Cut - 420.693m<sup>2</sup>  
Fill - 0.003m<sup>2</sup>  
Shoulder Fill - 0.563m<sup>2</sup>  
Base - 0.108m<sup>2</sup>  
Sub Base - 0.648m<sup>2</sup>  
Sub Grade - 0.864m<sup>2</sup>

Datum 1100.000m

Datum 1101.000m

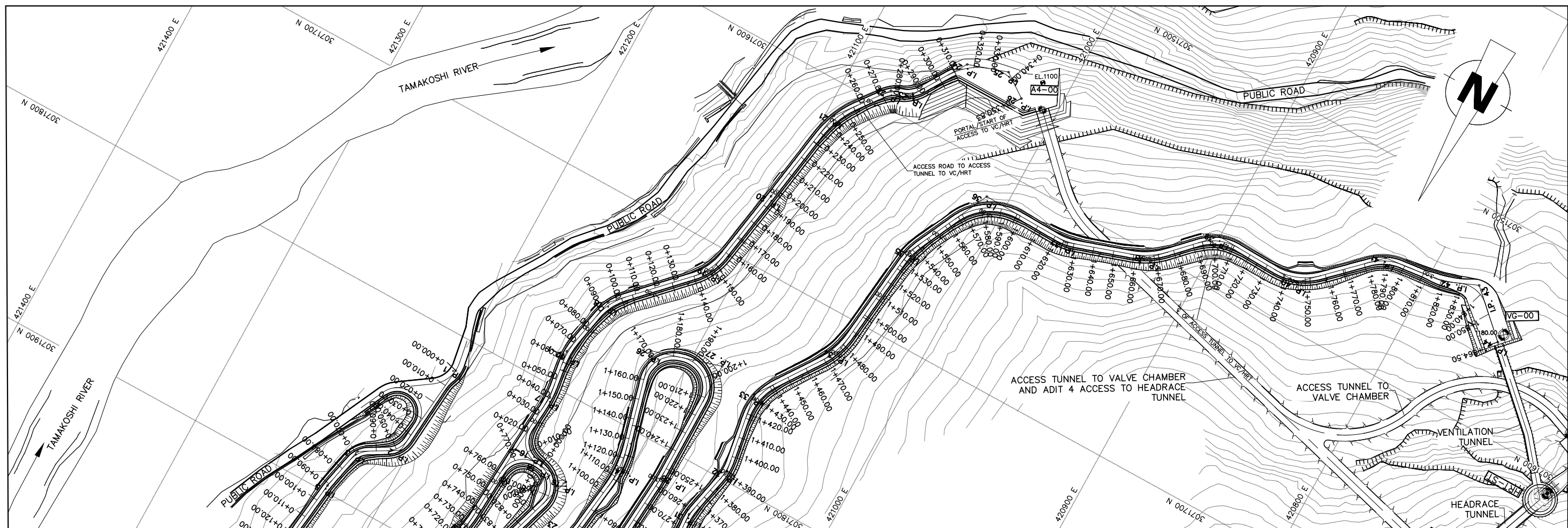
DRAFT STATUS:  
14.11.2018



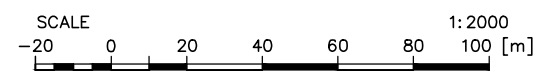






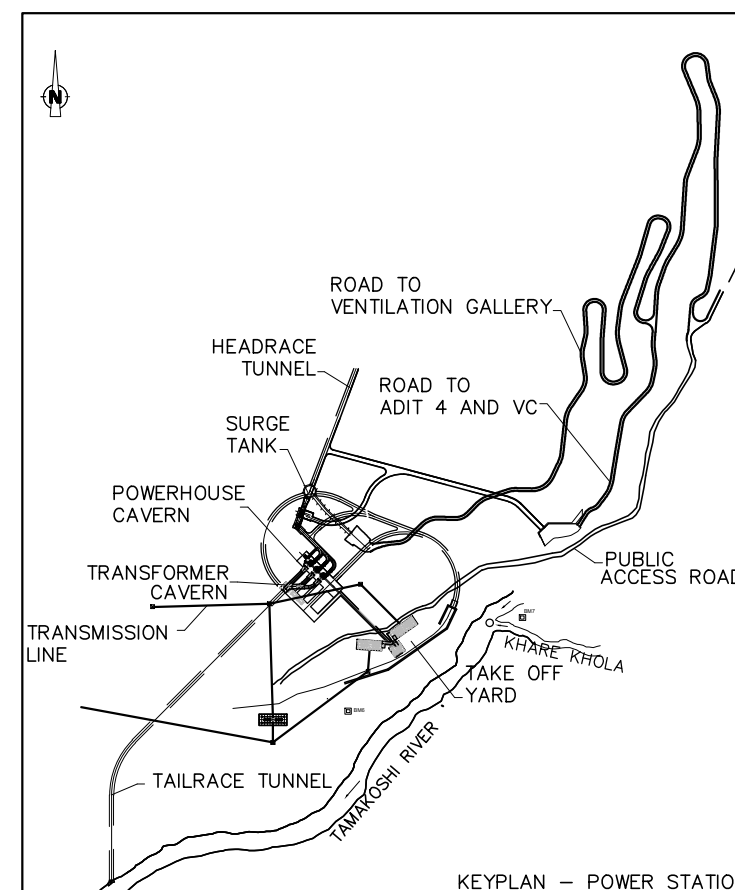


DRAFT STATUS:  
14.11.2018



#### NOTES:

1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).



#### Reference Drawings

Drwg. No.	Title
31-00053-DD-4813-1800	PROJECT ROADS, GENERAL, LAYOUT

#### Revisions

No.	Name	Date	Notes



**TAMAKOSHI V HYDROELECTRIC PROJECT**  
PROJECT DEVELOPMENT DEPARTMENT  
ENGINEERING SERVICES DIRECTORATE  
NEPAL ELECTRICITY AUTHORITY



CONSULTING ENGINEERS  
BAD VILBEL, GERMANY

### TAMAKOSHI V HYDROELECTRIC PROJECT DETAILED ENGINEERING DESIGN

	Name	Date
Prepared	B. Khadka	23.10.17
Drawn	B. Khadka	
Checked	Roloff	
Approved	Dr. Moeller	
Replaces Drwg. No:		
...		

CAD- File No.:

DETAILED DESIGN  
**PROJECT ROADS**  
**ROAD TO ADIT 4 AND**  
**VENTILATION ADIT**  
**ALIGNMENT PLAN**

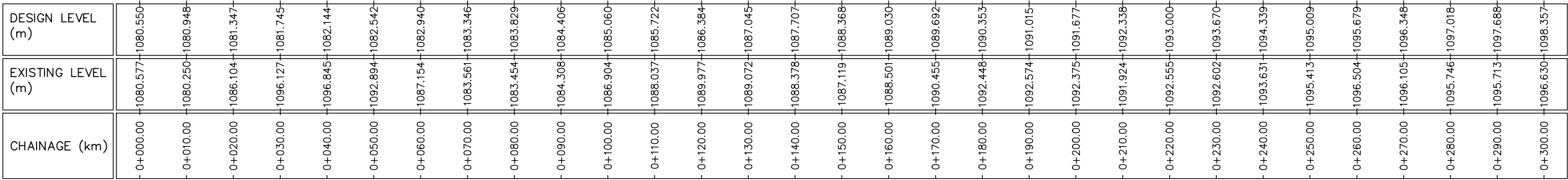
PROJECT DRAWING

Scale A3: 1:2000

Drwg. No.: 31-00053-DD-4813- Q 1807 REV. -

KEYPLAN - POWER STATION



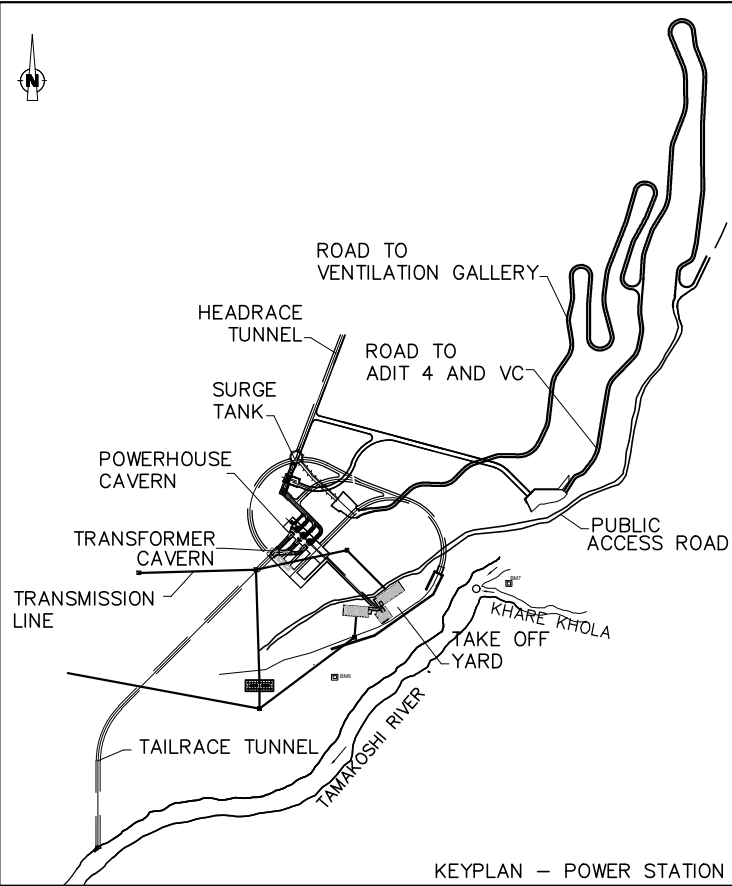


IP.No	CO—ORDINATES(m)		WCB (D—M—S)	DIST (m)	DEF. ANG (D—M—S)	TAN. LEN. (m)	SIMPLE CURVE DATA			CHAINAGE			
	EASTING	NORTHING					R (m)	E (m)	LC (m)	BC	MC	EC	IP
1	421199.700	3071815.440	05—00—01	0.000	00—00—00	0.000	0.000	0.000	0.000	0+000.00	0+000.00	0+000.00	0+000.00
2	421203.967	3071864.208	59—59—55	48.954	54—59—53	6.507	12.500	1.592	11.999	0+042.45	0+048.45	0+054.45	0+048.96
3	421222.409	3071874.856	12—37—21	21.954	47—22—40	5.484	12.500	1.150	10.336	0+063.75	0+068.92	0+074.09	0+069.23
5	421227.312	3071896.750	07—05—58	22.436	05—31—23	3.377	70.000	0.081	6.748	0+087.67	0+091.05	0+094.42	0+091.05
6	421235.719	3071964.250	359—46—45	68.022	07—19—20	3.839	60.000	0.123	7.668	0+155.23	0+159.07	0+162.90	0+159.07
78	421235.375	3072053.500	03—01—49	89.251	03—14—55	1.418	50.000	0.020	2.835	0+246.89	0+248.31	0+249.72	0+248.31




1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).


DRAFT STATUS:  
14.11.2018



Reference Drawings			
Drwg. No.		Title	
31-00053-DD-4813-1800		PROJECT ROADS, GENERAL, LAYOUT	
Revisions			
	Name	Date	Notes



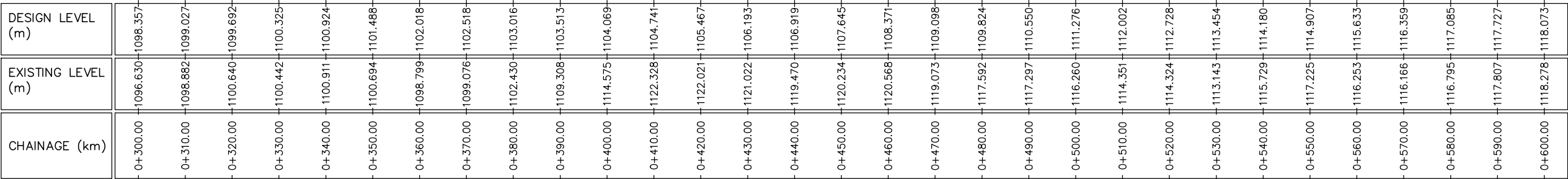
**TAMAKOSHI V HYDROELECTRIC PROJECT**  
**PROJECT DEVELOPMENT DEPARTMENT**  
**ENGINEERING SERVICES DIRECTORATE**  
**NEPAL ELECTRICITY AUTHORITY**

 <p><b>LAHMEYER INTERNATIONAL</b></p>	<p><b>CONSULTING ENGINEERS BAD VILBEL, GERMANY</b></p>
--	--

**TAMAKOSHI V HYDROELECTRIC PROJECT**  
**DETAILED ENGINEERING DESIGN**

	Name	Date	<p>DETAILED DESIGN</p> <p><u>PROJECT ROADS</u></p> <p><u>ROAD TO ADIT 4</u></p> <p>LONGITUDINAL PROFILE</p> <p>SHEET 1 OF 7</p> <p>PROJECT DRAWING</p>		
Prepared	B. Khadka	23.10.17			
Drawn	B. Khadka				
Checked	Roloff				
Approved	Dr. Moeller				
Replaces Drwg. No:					
...					
CAD- File No.:					
Scale A3: 1:1000			Drwg. No.: 31-00053-DD-4813- Q 1808	REV.	—



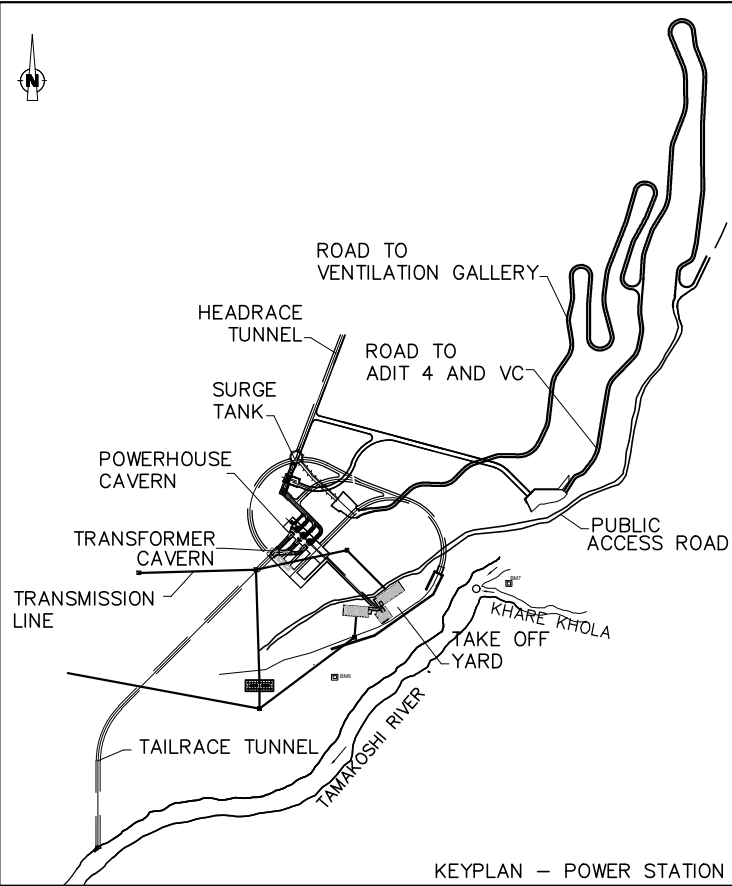




IP.No	CO-ORDINATES(m)		WCB (D-M-S)	DIST (m)	DEF. ANG (D-M-S)	TAN. LEN. (m)	SIMPLE CURVE DATA			CHAINAGE			
	EASTING	NORTHING					R (m)	E (m)	LC (m)	BC	MC	EC	IP
5	421239.094	3072123.750	338-11-54	70.348	24-49-55	11.008	50.000	1.197	21.670	0+307.64	0+318.48	0+329.31	0+318.65
6	421226.094	3072156.250	352-34-41	35.004	14-22-52	3.785	30.000	0.238	7.530	0+349.52	0+353.29	0+357.05	0+353.30
7	421220.688	3072197.750	245-19-47	41.851	107-14-46	20.363	15.000	10.291	28.077	0+374.75	0+388.79	0+402.83	0+395.11
8	421188.031	3072182.750	157-22-16	35.937	87-57-37	14.475	15.000	5.846	23.028	0+403.93	0+415.45	0+426.96	0+418.41
9	421212.625	3072123.750	179-01-23	63.921	21-39-07	9.562	50.000	0.906	18.895	0+406.84	0+476.29	0+485.73	0+476.40
10	421213.469	3072074.250	200-56-50	49.507	21-55-37	9.686	50.000	0.930	19.135	0+515.99	0+525.56	0+535.12	0+525.68
11	421195.094	3072026.250	183-44-16	51.397	17-12-41	4.540	30.000	0.342	9.012	0+572.29	0+576.80	0+581.30	0+576.83

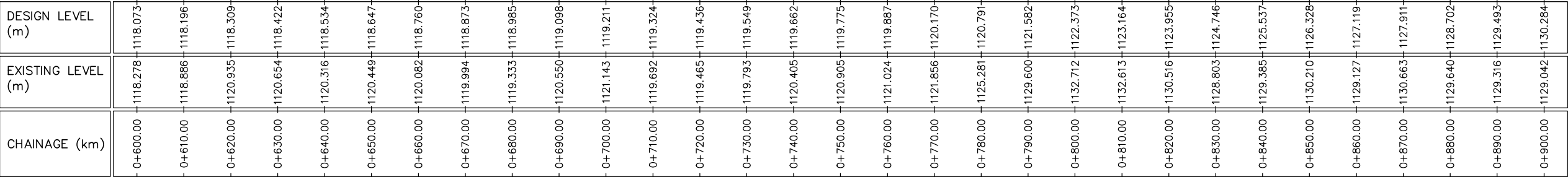


1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).

DRAFT STATUS:  
14.11.2018



Reference Drawings					
Drwg. No.			Title		
31-00053-DD-4813-1800			PROJECT ROADS, GENERAL, LAYOUT		
Revisions					
	Name	Date	Notes		
<div><div><p><b>TAMAKOSHI V HYDROELECTRIC PROJECT</b> <b>PROJECT DEVELOPMENT DEPARTMENT</b> <b>ENGINEERING SERVICES DIRECTORATE</b> <b>NEPAL ELECTRICITY AUTHORITY</b></p></div><div><div><p><b>LAHMEYER</b> <b>INTERNATIONAL</b></p></div><div><p><b>CONSULTING ENGINEERS</b> <b>BAD VILBEL, GERMANY</b></p></div></div></div>					
<b>TAMAKOSHI V HYDROELECTRIC PROJECT</b> <b>DETAILED ENGINEERING DESIGN</b>					
	Name	Date	DETAILED DESIGN		
Prepared	B. Khadka	23.10.17	<u>PROJECT ROADS</u>		
Drawn	B. Khadka		<u>ROAD TO ADIT 4</u>		
Checked	Roloff		LONGITUDINAL PROFILE		
Approved	Dr. Moeller		SHEET 2 OF 7		
Replaces Drwg. No:					
...					
CAD- File No.:			PROJECT DRAWING		
Scale A3: 1:1000			Drwg. No.: 31-00053-DD-4813- Q 1808		REV. -



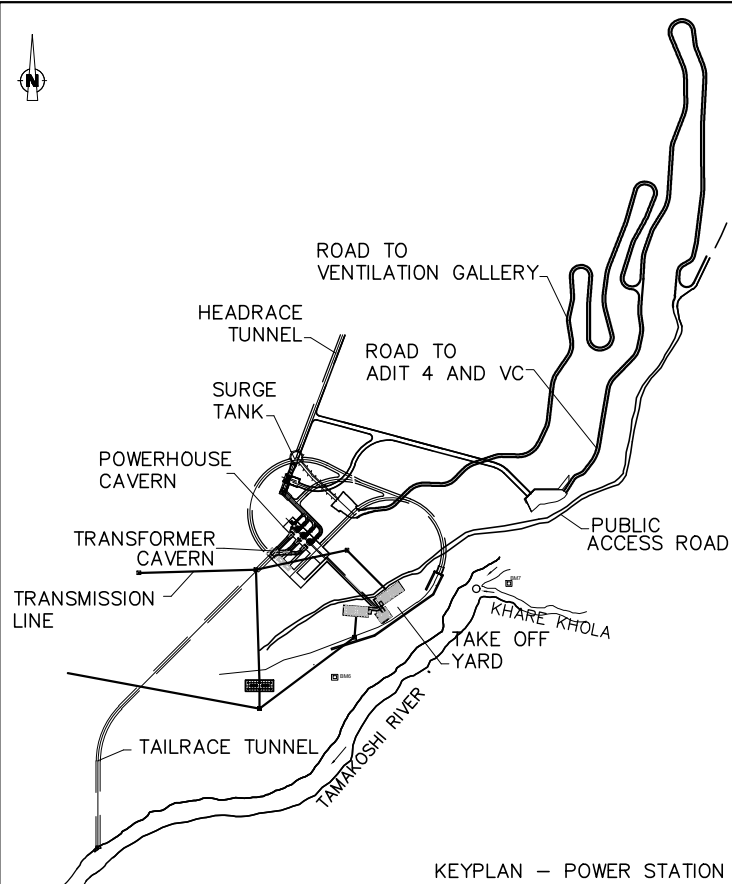
IP.No	CO—ORDINATES(m)		WCB (D—M—S)	DIST (m)	DEF. ANG (D—M—S)	TAN. LEN. (m)	SIMPLE CURVE DATA			CHAINAGE			
	EASTING	NORTHING					R (m)	E (m)	LC (m)	BC	MC	EC	IP
12	421190.031	3071948.750	211—33—06	77.665	27—48—40	12.379	50.000	1.510	24.270	0+642.05	0+654.19	0+666.32	0+654.43
13	421169.000	3071914.500	199—19—41	40.192	12—13—16	5.353	50.000	0.286	10.665	0+688.78	0+694.11	0+699.44	0+694.13
14	421157.250	3071881.000	183—34—33	35.501	15—45—02	6.916	50.000	0.476	13.745	0+722.67	0+729.55	0+736.42	0+729.59
15	421154.469	3071836.500	273—52—42	44.587	90—18—13	12.566	12.500	5.225	19.701	0+761.52	0+771.37	0+781.22	0+774.09
16	421124.969	3071838.500	17—16—18	29.568	103—23—45	15.827	12.500	7.668	22.558	0+782.39	0+793.67	0+804.95	0+798.22
17	421143.469	3071898.000	28—52—12	62.310	11—35—47	5.077	50.000	0.257	10.120	0+846.36	0+851.42	0+856.48	0+851.44
18	421161.250	3071930.250	21—38—43	36.827	07—13—29	6.313	100.000	0.199	12.610	0+881.92	0+888.23	0+894.53	0+888.23



SCALE 1:1000

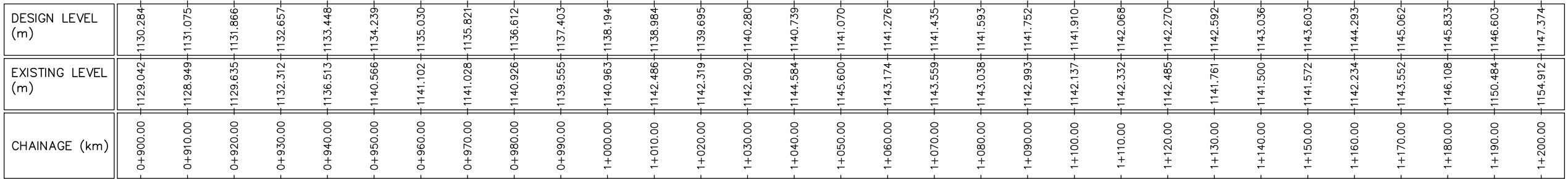
10 0 10 20 30 40 50 [m]

1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).

DRAFT STATUS:  
14.11.2018



Reference Drawings					
Drwg. No.			Title		
31-00053-DD-4813-1800			PROJECT ROADS, GENERAL, LAYOUT		
Revisions					
	Name	Date	Notes		
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;">  <p><b>TAMAKOSHI V HYDROELECTRIC PROJECT</b>  <b>PROJECT DEVELOPMENT DEPARTMENT</b>  <b>ENGINEERING SERVICES DIRECTORATE</b>  <b>NEPAL ELECTRICITY AUTHORITY</b></p> </div> <div style="text-align: center;">  <p><b>LAHMEYER</b>  <b>INTERNATIONAL</b></p> </div> <div style="text-align: center;"> <p><b>CONSULTING ENGINEERS</b>  <b>BAD VILBEL, GERMANY</b></p> </div> </div>					
<b>TAMAKOSHI V HYDROELECTRIC PROJECT</b> <b>DETAILED ENGINEERING DESIGN</b>					
	Name	Date	<b>DETAILED DESIGN</b>  <u>PROJECT ROADS</u>  <u>ROAD TO ADIT 4</u>  <b>LONGITUDINAL PROFILE</b> <b>SHEET 3 OF 7</b>  <b>PROJECT DRAWING</b>		
Prepared	B. Khadka	23.10.17			
Drawn	B. Khadka				
Checked	Roloff				
Approved	Dr. Moeller				
Replaces Drwg. No:					
...					
CAD- File No.:					
Scale A3: 1:1000			Drwg. No.: 31-00053-DD-4813-Q 1808		
			REV. —		

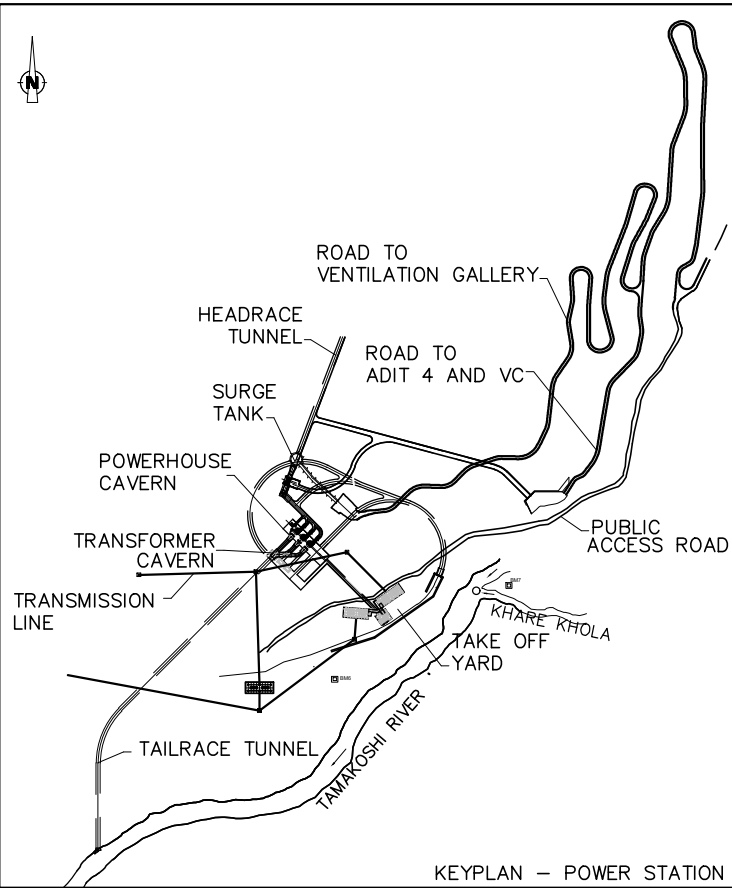




IP.No	CO-ORDINATES(m)		WCB (D-M-S)	DIST (m)	DEF. ANG (D-M-S)	TAN. LEN. (m)	SIMPLE CURVE DATA			CHAINAGE			
	EASTING	NORTHING					R (m)	E (m)	LC (m)	BC	MC	EC	IP
19	421177.719	3071971.750	283-10-58	44.648	98-27-46	14.497	12.500	6.642	21.481	0+918.37	0+929.11	0+939.85	0+932.87
20	421149.969	3071978.250	196-05-19	28.501	87-05-43	11.882	12.500	4.746	19.001	0+941.97	0+951.47	0+960.97	0+953.85
21	421134.250	3071923.750	201-25-23	56.722	05-20-03	4.658	100.000	0.108	9.310	1+001.15	1+005.81	1+010.46	1+005.81
23	421109.531	3071860.750	187-32-57	67.676	13-52-16	7.907	65.000	0.479	15.737	1+065.57	1+073.44	1+081.31	1+073.48
24	421104.031	3071819.250	165-19-24	41.863	22-13-30	11.785	60.000	1.146	23.274	1+103.48	1+115.12	1+126.75	1+115.27
26	421119.156	3071761.500	253-26-19	59.698	88-06-54	14.514	15.000	5.873	23.069	1+160.15	1+171.69	1+183.22	1+174.66
27	421084.688	3071751.250	359-56-34	35.960	106-30-05	20.088	15.000	10.070	27.882	1+184.58	1+198.52	1+212.46	1+204.67

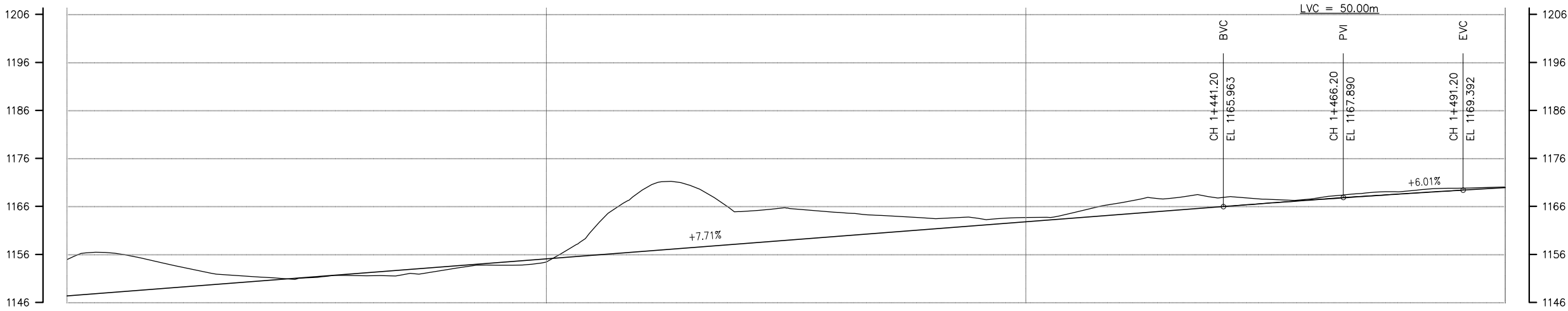


1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).

DRAFT STATUS:  
14.11.2018



Reference Drawings				
Drwg. No.		Title		
31-00053-DD-4813-1800		PROJECT ROADS, GENERAL, LAYOUT		
Revisions				
	Name	Date	Notes	
 <p><b>TAMAKOSHI V HYDROELECTRIC PROJECT</b>  <b>PROJECT DEVELOPMENT DEPARTMENT</b>  <b>ENGINEERING SERVICES DIRECTORATE</b>  <b>NEPAL ELECTRICITY AUTHORITY</b></p>				
 <p><b>LAHMEYER</b>  <b>INTERNATIONAL</b></p>			<p><b>CONSULTING ENGINEERS</b>  <b>BAD VILBEL, GERMANY</b></p>	
<p align="center"><b>TAMAKOSHI V HYDROELECTRIC PROJECT</b>  <b>DETAILED ENGINEERING DESIGN</b></p>				
	Name	Date	DETAILED DESIGN	
Prepared	B. Khadka	23.10.17	<u>PROJECT ROADS</u> <u>ROAD TO ADIT 4</u> <b>LONGITUDINAL PROFILE</b> SHEET 4 OF 7	
Drawn	B. Khadka			
Checked	Roloff			
Approved	Dr. Moeller			
Replaces Drwg. No:				
... <b>CAD- File No.:</b>			<b>PROJECT DRAWING</b>	
Scale A3: 1:1000			Drwg. No.: 31-00053-DD-4813- <b>Q 1808</b>	
			REV.	-



DESIGN LEVEL (m)	1+200.001147.374	1+210.001148.145	1+220.001148.915	1+230.001149.686	1+240.001150.457	1+250.001151.227	1+260.001151.998	1+270.001152.769	1+280.001153.540	1+290.001154.310	1+300.001155.081	1+310.001155.852	1+320.001156.622	1+330.001157.393	1+340.001158.164	1+350.001158.934	1+360.001159.705	1+370.001160.476	1+380.001161.247	1+390.001162.017	1+400.001162.788	1+410.001163.559	1+420.001164.329	1+430.001165.100	1+440.001165.871	1+450.001166.628	1+460.001167.352	1+470.001168.042	1+480.001168.698	1+490.001169.319	1+500.001169.920
EXISTING LEVEL (m)	1+200.001154.912	1+210.001156.246	1+220.001154.229	1+230.001152.115	1+240.001151.301	1+250.001151.121	1+260.001151.606	1+270.001151.776	1+280.001152.937	1+290.001153.760	1+300.001154.439	1+310.001161.544	1+320.001169.422	1+330.001170.397	1+340.001164.901	1+350.001165.674	1+360.001164.810	1+370.001164.095	1+380.001163.514	1+390.001163.516	1+400.001163.678	1+410.001164.712	1+420.001166.793	1+430.001167.861	1+440.001167.744	1+450.001167.488	1+460.001167.644	1+470.001168.678	1+480.001169.235	1+490.001169.801	1+500.001170.059
CHAINAGE (km)	1+200.00	1+210.00	1+220.00	1+230.00	1+240.00	1+250.00	1+260.00	1+270.00	1+280.00	1+290.00	1+300.00	1+310.00	1+320.00	1+330.00	1+340.00	1+350.00	1+360.00	1+370.00	1+380.00	1+390.00	1+400.00	1+410.00	1+420.00	1+430.00	1+440.00	1+450.00	1+460.00	1+470.00	1+480.00	1+490.00	1+500.00

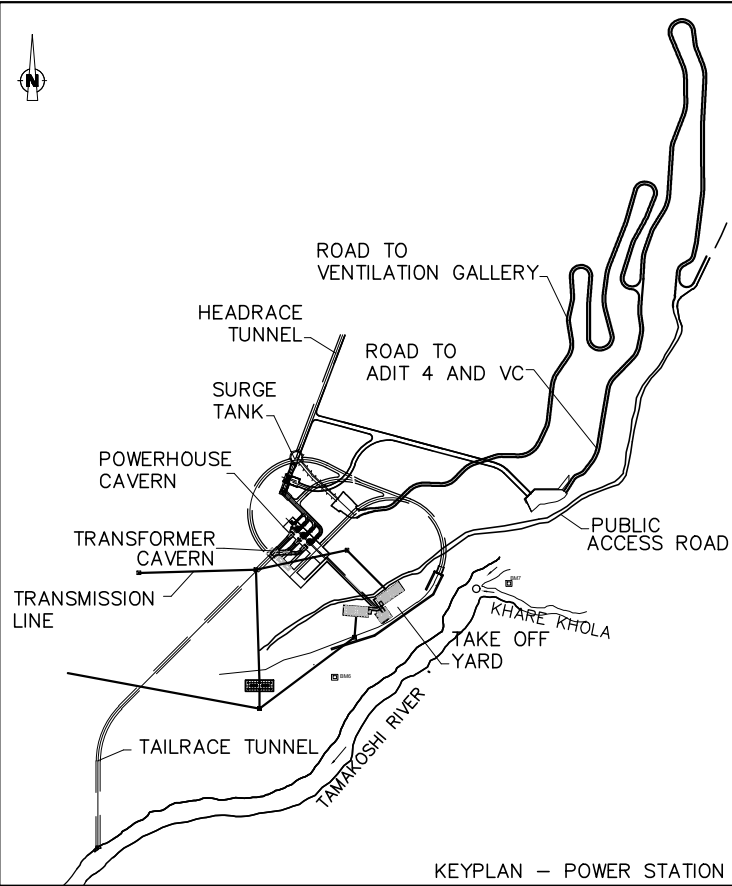
IP.No	CO-ORDINATES(m)		WCB (D-M-S)	DIST (m)	DEF. ANG (D-M-S)	TAN. LEN. (m)	SIMPLE CURVE DATA			CHAINAGE			
	EASTING	NORTHING					R (m)	E (m)	LC (m)	BC	MC	EC	IP
27	421084.688	3071751.250	359-56-34	35.960	106-30-05	20.088	15.000	10.070	27.882	1+184.58	1+198.52	1+212.46	1+204.67
28	421084.625	3071814.500	04-31-15	63.250	04-34-40	3.997	100.000	0.080	7.990	1+251.62	1+255.62	1+259.61	1+255.62
29	421088.875	3071868.250	259-46-29	53.918	104-44-53	16.216	12.500	7.975	22.853	1+293.31	1+304.74	1+316.16	1+309.53
30	421061.156	3071863.250	176-06-40	28.166	83-39-47	11.189	12.500	4.276	18.253	1+316.92	1+326.05	1+335.17	1+328.11
31	421063.875	3071823.250	192-34-07	40.092	16-27-19	4.338	30.000	0.312	8.616	1+359.74	1+364.05	1+368.36	1+364.08
32	421057.688	3071795.500	170-45-28	28.431	21-48-45	5.780	30.000	0.552	11.421	1+386.67	1+392.38	1+398.09	1+392.45
33	421064.156	3071755.750	214-39-02	40.273	43-53-39	12.089	30.000	2.344	22.983	1+420.49	1+431.98	1+443.47	1+432.58
34	421037.719	3071717.500	186-29-11	46.497	28-09-59	10.035	40.000	1.240	19.664	1+467.84	1+477.67	1+487.50	1+477.87



NOTES:

1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).

DRAFT STATUS:  
14.11.2018





Reference Drawings

Drwg. No.	Title
31-00053-DD-4813-1800	PROJECT ROADS, GENERAL, LAYOUT

Revisions

	Name	Date	Notes

TAMAKOSHI V HYDROELECTRIC PROJECT  
PROJECT DEVELOPMENT DEPARTMENT  
ENGINEERING SERVICES DIRECTORATE  
NEPAL ELECTRICITY AUTHORITY

LAHMEYER  
INTERNATIONAL

CONSULTING ENGINEERS  
BAD VILBEL, GERMANY

TAMAKOSHI V HYDROELECTRIC PROJECT  
DETAILED ENGINEERING DESIGN

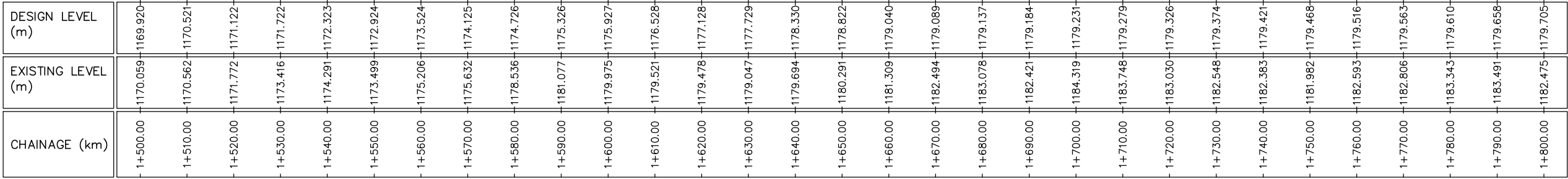
	Name	Date
Prepared	B. Khadka	23.10.17
Drawn	B. Khadka	
Checked	Roloff	
Approved	Dr. Moeller	
Replaces Drwg. No:		
...		
CAD- File No.:		
Scale A3:	1:1000	

DETAILED DESIGN  
**PROJECT ROADS**  
**ROAD TO ADIT 4**  
**LONGITUDINAL PROFILE**  
SHEET 5 OF 7  
  
PROJECT DRAWING

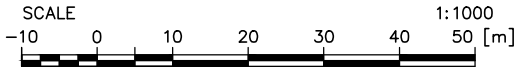
Drwg. No.: 31-00053-DD-4813-Q 1808

REV. —

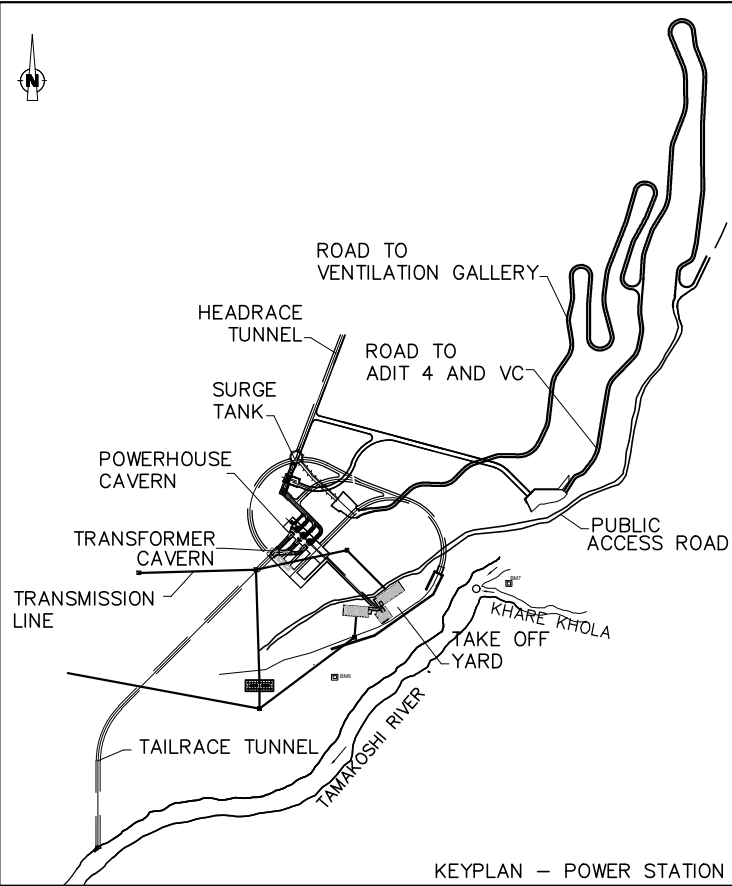






IP.No	CO-ORDINATES(m)		WCB (D-M-S)	DIST (m)	DEF. ANG (D-M-S)	TAN. LEN. (m)	SIMPLE CURVE DATA			CHAINAGE			
	EASTING	NORTHING					R (m)	E (m)	LC (m)	BC	MC	EC	IP
35	421030.812	3071656.750	205-54-47	61.141	19-25-44	6.848	40.000	0.582	13.564	1+531.76	1+538.54	1+545.32	1+538.61
36	421010.406	3071614.750	271-16-26	46.695	65-21-46	19.246	30.000	5.643	34.224	1+565.92	1+583.03	1+600.14	1+585.17
37	420965.438	3071615.750	251-39-33	44.979	19-36-44	5.185	30.000	0.445	10.269	1+620.69	1+625.83	1+630.96	1+625.88
38	420925.469	3071602.500	224-24-11	42.108	27-15-20	9.698	40.000	1.159	19.028	1+658.19	1+667.71	1+677.22	1+667.89
39	420900.250	3071576.750	271-56-29	36.042	47-32-17	11.010	25.000	2.317	20.743	1+692.55	1+702.92	1+713.29	1+703.56
40	420856.000	3071578.250	225-59-50	44.275	45-56-43	12.717	30.000	2.584	24.057	1+733.84	1+745.87	1+757.90	1+746.56
41	420823.125	3071546.500	272-24-39	45.704	46-24-55	10.719	25.000	2.201	20.253	1+780.17	1+790.30	1+800.42	1+790.89



1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).



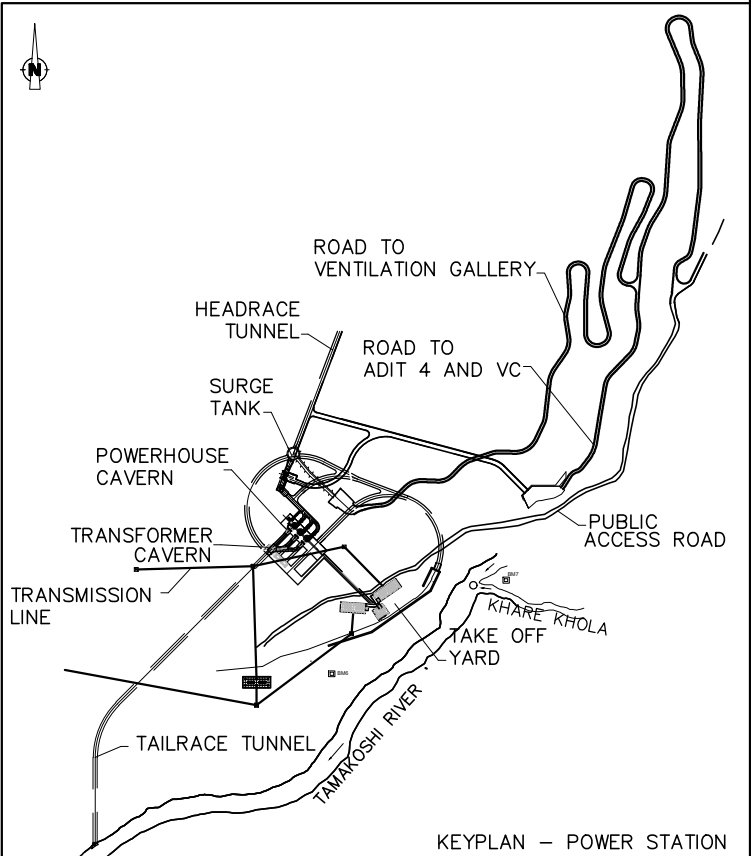
Reference Drawings				
Drwg. No.		Title		
31-00053-DD-4813-1800		PROJECT ROADS, GENERAL, LAYOUT		
Revisions				
	Name	Date	Notes	
 <p><b>TAMAKOSHI V HYDROELECTRIC PROJECT</b>  <b>PROJECT DEVELOPMENT DEPARTMENT</b>  <b>ENGINEERING SERVICES DIRECTORATE</b>  <b>NEPAL ELECTRICITY AUTHORITY</b></p>				
 <p><b>LAHMEYER</b>  <b>INTERNATIONAL</b></p>			<p><b>CONSULTING ENGINEERS</b>  <b>BAD VILBEL, GERMANY</b></p>	
<p align="center"><b>TAMAKOSHI V HYDROELECTRIC PROJECT</b>  <b>DETAILED ENGINEERING DESIGN</b></p>				
	Name	Date	DETAILED DESIGN	
Prepared	B. Khadka	23.10.17	<u>PROJECT ROADS</u> <u>ROAD TO ADIT 4</u> <b>LONGITUDINAL PROFILE</b> SHEET 6 OF 7	
Drawn	B. Khadka			
Checked	Roloff			
Approved	Dr. Moeller			
Replaces Drwg. No:				
...				
CAD- File No.:			PROJECT DRAWING	
Scale A3: 1:1000			Drwg. No.: 31-00053-DD-4813- Q 1808	
			REV.	-





NOTES:

1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).



Reference Drawings

Drwg. No.	Title
31-00053-DD-4813-1800	PROJECT ROADS, GENERAL, LAYOUT

Revisions	Name	Date	Notes



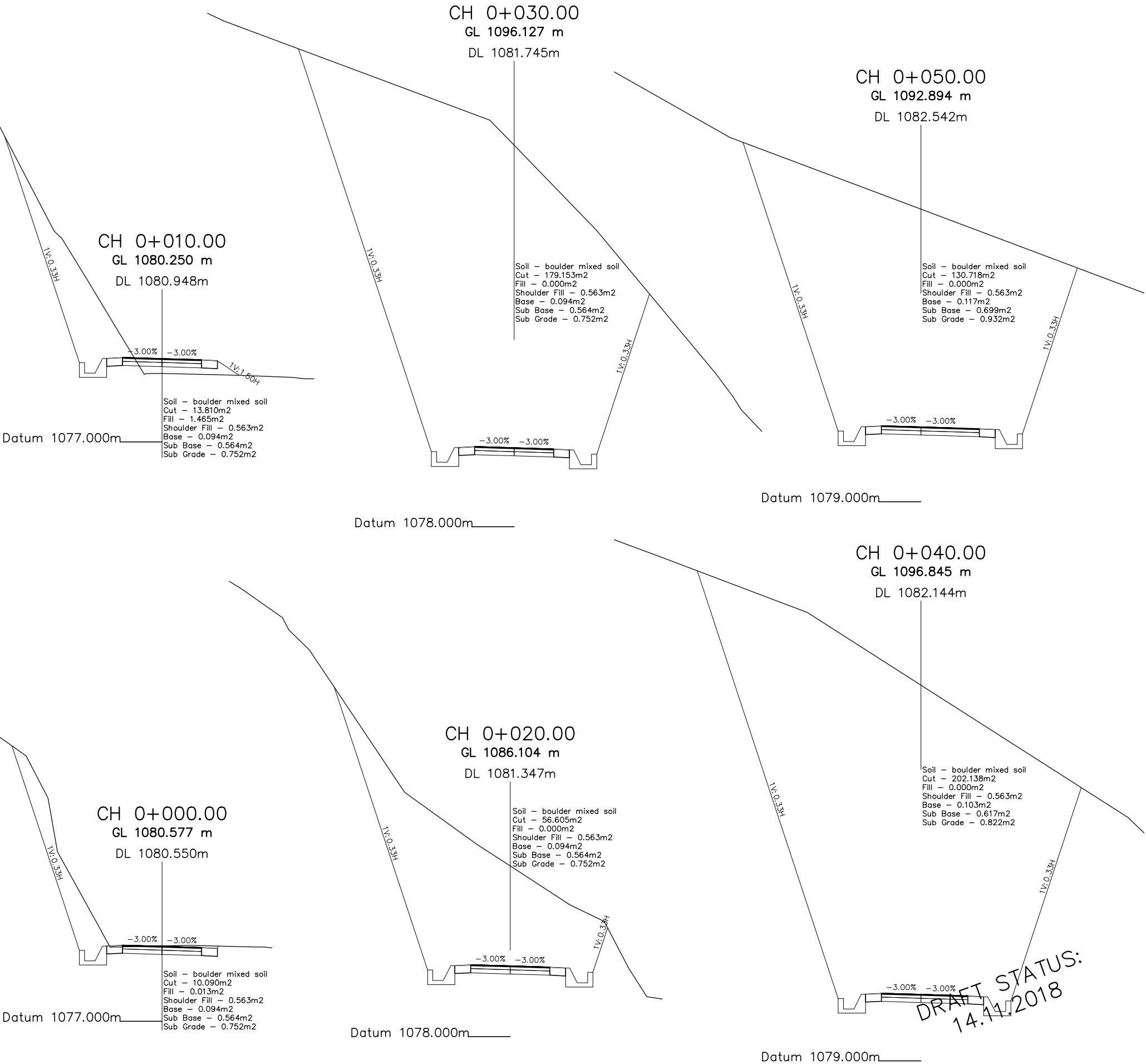
TAMAKOSHI V HYDROELECTRIC PROJECT  
PROJECT DEVELOPMENT DEPARTMENT  
ENGINEERING SERVICES DIRECTORATE  
NEPAL ELECTRICITY AUTHORITY



CONSULTING ENGINEERS  
BAD VILBEL, GERMANY

TAMAKOSHI V HYDROELECTRIC PROJECT  
DETAILED ENGINEERING DESIGN

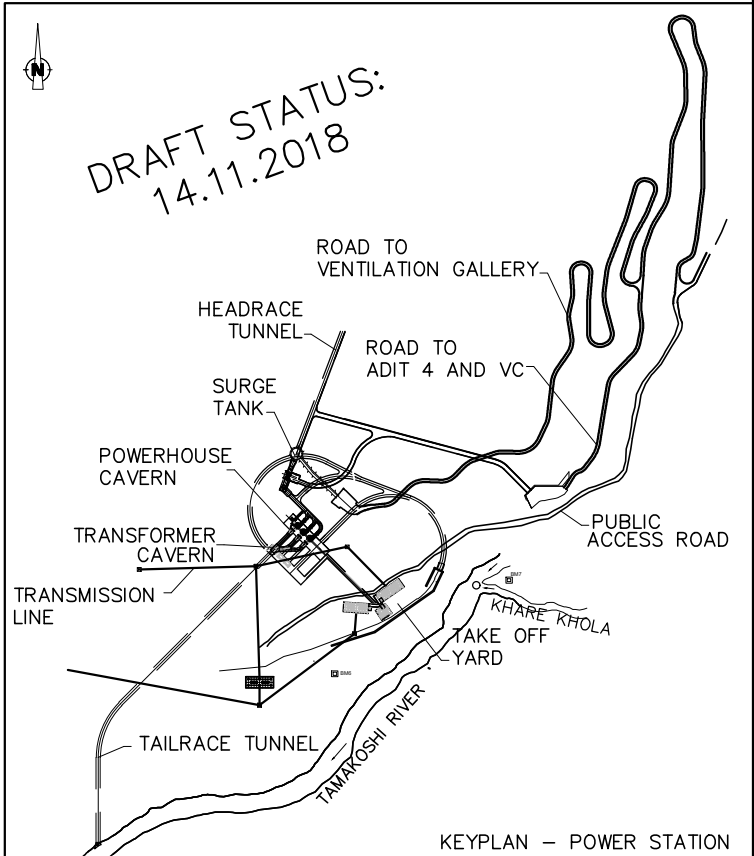
Name	Date	DETAILLED DESIGN
Prepared B. Khadka	23.10.17	PROJECT ROADS
Drawn B. Khadka		ROAD TO ADIT 4
Checked Roloff		CROSS SECTION
Approved Dr. Moeller		CH 0+000.00-0+050.00
Replaces Drwg. No:		SHEET 1 OF 20
...		PROJECT DRAWING
CAD- File No.:		
Scale A3: 1:200	Drwg. No.: 31-00053-DD-4813- Q 1809	REV. -



DRAFT STATUS:  
14.11.2018

NOTES:

1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).



Reference Drawings

Drwg. No.	Title
31-00053-DD-4813-1800	PROJECT ROADS, GENERAL, LAYOUT

Revisions

Name	Date	Notes
------	------	-------



TAMAKOSHI V HYDROELECTRIC PROJECT  
PROJECT DEVELOPMENT DEPARTMENT  
ENGINEERING SERVICES DIRECTORATE  
NEPAL ELECTRICITY AUTHORITY



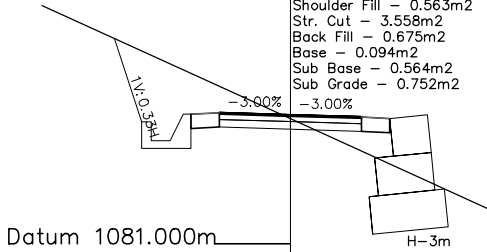
CONSULTING ENGINEERS  
BAD VILBEL, GERMANY

TAMAKOSHI V HYDROELECTRIC PROJECT  
DETAILED ENGINEERING DESIGN

Name	Date	DETAILLED DESIGN
Prepared B. Khadka	23.10.17	PROJECT ROADS
Drawn B. Khadka		ROAD TO ADIT 4
Checked Roloff		CROSS SECTION
Approved Dr. Moeller		CH 0+060.00-0+170.00
Replaces Drwg. No:		SHEET 2 OF 20
...		PROJECT DRAWING
CAD- File No.:		
Scale A3: 1:200		Drwg. No.: 31-00053-DD-4813- Q 1809 REV. -

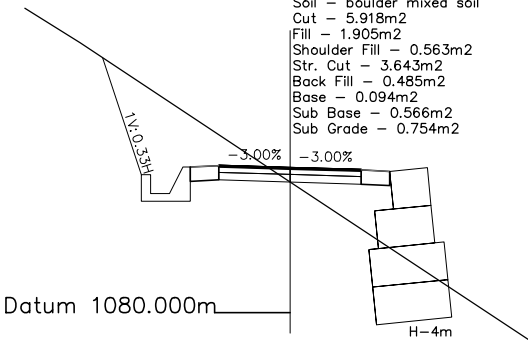
CH 0+090.00  
GL 1084.308 m  
DL 1084.406m

Soil - boulder mixed soil  
Cut - 4.918m2  
Fill - 0.845m2  
Shoulder Fill - 0.563m2  
Str. Cut - 3.558m2  
Back Fill - 0.675m2  
Base - 0.094m2  
Sub Base - 0.564m2  
Sub Grade - 0.752m2



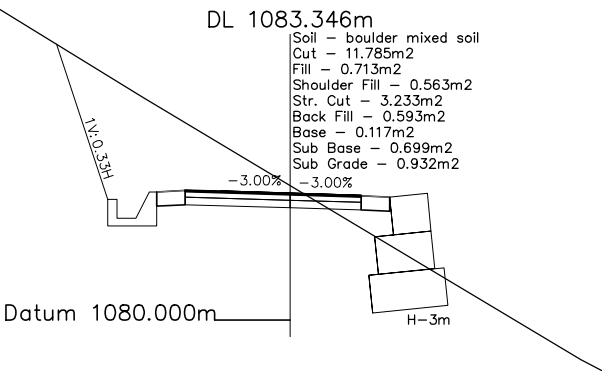
CH 0+080.00  
GL 1083.454 m  
DL 1083.829m

Soil - boulder mixed soil  
Cut - 5.918m2  
Fill - 1.905m2  
Shoulder Fill - 0.563m2  
Str. Cut - 3.643m2  
Back Fill - 0.485m2  
Base - 0.094m2  
Sub Base - 0.566m2  
Sub Grade - 0.754m2



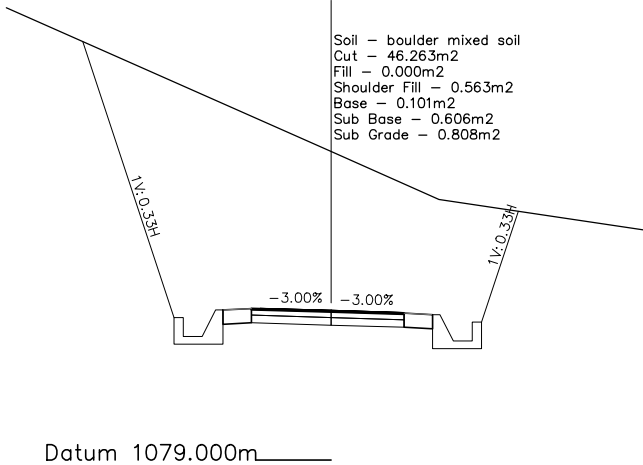
CH 0+070.00  
GL 1083.561 m  
DL 1083.346m

Soil - boulder mixed soil  
Cut - 11.785m2  
Fill - 0.713m2  
Shoulder Fill - 0.563m2  
Str. Cut - 3.233m2  
Back Fill - 0.593m2  
Base - 0.117m2  
Sub Base - 0.699m2  
Sub Grade - 0.932m2



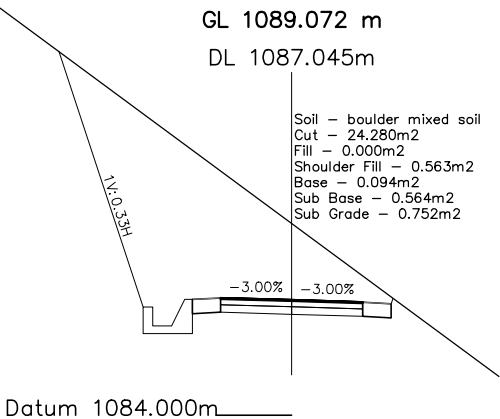
CH 0+060.00  
GL 1087.154 m  
DL 1082.940m

Soil - boulder mixed soil  
Cut - 46.263m2  
Fill - 0.000m2  
Shoulder Fill - 0.563m2  
Base - 0.101m2  
Sub Base - 0.606m2  
Sub Grade - 0.808m2



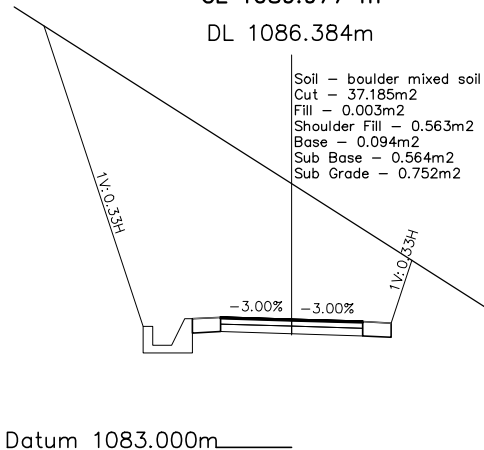
CH 0+130.00  
GL 1089.072 m  
DL 1087.045m

Soil - boulder mixed soil  
Cut - 24.280m2  
Fill - 0.000m2  
Shoulder Fill - 0.563m2  
Base - 0.094m2  
Sub Base - 0.564m2  
Sub Grade - 0.752m2



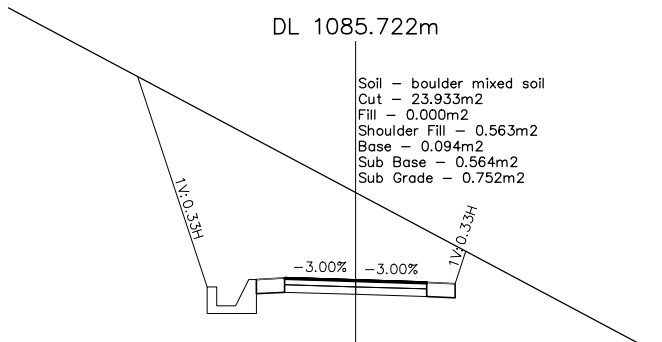
CH 0+120.00  
GL 1089.977 m  
DL 1086.384m

Soil - boulder mixed soil  
Cut - 37.185m2  
Fill - 0.003m2  
Shoulder Fill - 0.563m2  
Base - 0.094m2  
Sub Base - 0.564m2  
Sub Grade - 0.752m2



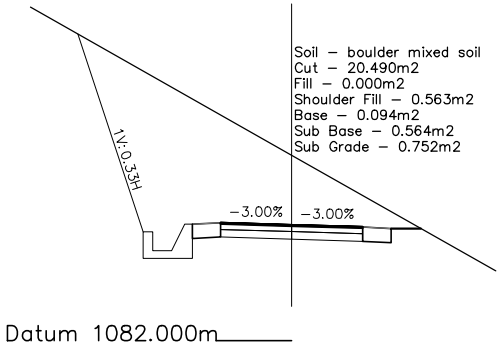
CH 0+110.00  
GL 1088.037 m  
DL 1085.722m

Soil - boulder mixed soil  
Cut - 23.933m2  
Fill - 0.000m2  
Shoulder Fill - 0.563m2  
Base - 0.094m2  
Sub Base - 0.564m2  
Sub Grade - 0.752m2



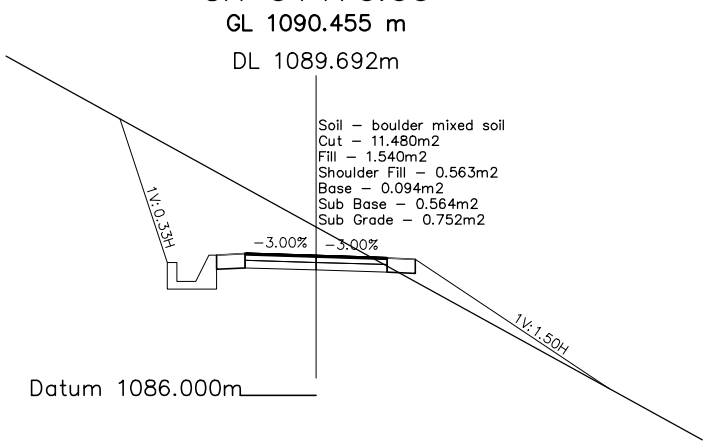
CH 0+100.00  
GL 1086.904 m  
DL 1085.060m

Soil - boulder mixed soil  
Cut - 20.490m2  
Fill - 0.000m2  
Shoulder Fill - 0.563m2  
Base - 0.094m2  
Sub Base - 0.564m2  
Sub Grade - 0.752m2



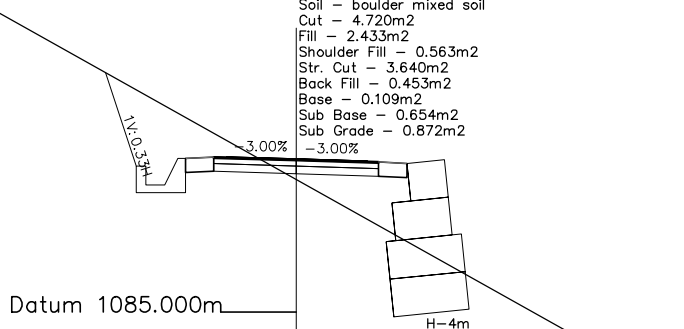
CH 0+170.00  
GL 1090.455 m  
DL 1089.692m

Soil - boulder mixed soil  
Cut - 11.480m2  
Fill - 1.540m2  
Shoulder Fill - 0.563m2  
Base - 0.094m2  
Sub Base - 0.564m2  
Sub Grade - 0.752m2



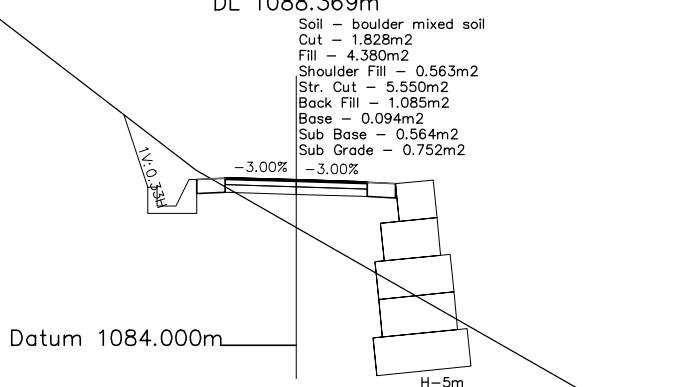
CH 0+160.00  
GL 1088.501 m  
DL 1089.030m

Soil - boulder mixed soil  
Cut - 4.720m2  
Fill - 2.433m2  
Shoulder Fill - 0.563m2  
Str. Cut - 3.640m2  
Back Fill - 0.453m2  
Base - 0.109m2  
Sub Base - 0.654m2  
Sub Grade - 0.872m2



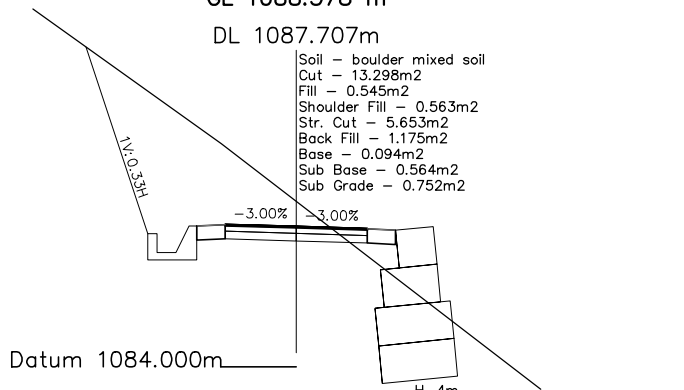
CH 0+150.00  
GL 1087.119 m  
DL 1088.369m

Soil - boulder mixed soil  
Cut - 1.828m2  
Fill - 4.380m2  
Shoulder Fill - 0.563m2  
Str. Cut - 5.550m2  
Back Fill - 1.085m2  
Base - 0.094m2  
Sub Base - 0.564m2  
Sub Grade - 0.752m2



CH 0+140.00  
GL 1088.378 m  
DL 1087.707m

Soil - boulder mixed soil  
Cut - 13.298m2  
Fill - 0.545m2  
Shoulder Fill - 0.563m2  
Str. Cut - 5.653m2  
Back Fill - 1.175m2  
Base - 0.094m2  
Sub Base - 0.564m2  
Sub Grade - 0.752m2



Soil - boulder mixed soil  
 Cut - 10.065m<sup>2</sup>  
 Fill - 0.425m<sup>2</sup>  
 Shoulder Fill - 0.563m<sup>2</sup>  
 Base - 0.094m<sup>2</sup>  
 Sub Base - 0.564m<sup>2</sup>  
 Sub Grade - 0.752m<sup>2</sup>

1V:0.53H  
 -3.00%  
 -3.00%  
 1V:1.50H  
 Datum 1088.000m

Soil – boulder mixed soil  
 Cut – 1.313m  
 Fill – 3.623m  
 Shoulder Fill – 0.563m  
 Str. Cut – 3.225m  
 Back Fill – 0.328m  
 Base – 0.094m  
 Sub Base – 0.564m  
 Sub Grade – 0.752m  
 -3.00%  
 1:1.00H:1V  
 Datum 1089.000m  
 H=4m

GL 1096.504 m

DL 1095.679m

Soil - boulder mixed soil  
 Cut - 14.635m<sup>2</sup>  
 Fill - 0.353m<sup>2</sup>  
 Shoulder Fill - 0.563m<sup>2</sup>  
 Str. Cut - 3.665m<sup>2</sup>  
 Back Fill - 0.825m<sup>2</sup>  
 Base - 0.094m<sup>2</sup>  
 Sub Base - 0.564m<sup>2</sup>  
 Sub Grade - 0.752m<sup>2</sup>

1:0.33H

-3.00% -3.00%

Datum 1092.000m

H=3m

[illegible]

Soil – boulder mixed soil  
 Cut – 2.370m<sup>2</sup>  
 Fill – 1.348m<sup>2</sup>  
 Shoulder Fill – 0.563m<sup>2</sup>  
 Str. Cut – 2.850m<sup>2</sup>  
 Back Fill – 0.460m<sup>2</sup>  
 Base – 0.094m<sup>2</sup>  
 Sub Base – 0.564m<sup>2</sup>  
 Sub Grade – 0.752m<sup>2</sup>

11.03m  
 -3.00%  
 -3.00%  
 Datum 1089.000m  
 H-3m

GL 1095.413 m  
DL 1095.009m

Soil - boulder mixed soil  
Cut - 11.440m  
Fill - 1.280m  
Shoulder Fill - 0.563m  
Str. Cut - 4.093m  
Back Fill - 0.633m  
Base - 0.106m  
Sub Base - 0.636m  
Sub Grade - 0.848m

1:0.33H  
-3.00%  
3.00%

Datum 1092.000m

H-4m

Soil – boulder mixed soil  
 Cut – 22.090m<sup>2</sup>  
 Fill – 0.000m<sup>2</sup>  
 Shoulder Fill – 0.563m<sup>2</sup>  
 Base – 0.094m<sup>2</sup>  
 Sub Base – 0.564m<sup>2</sup>  
 Sub Grade – 0.752m<sup>2</sup>

Datum 1087.000m

Diagram illustrating a cross-section of a road embankment. The diagram shows a road surface with a 3.00% downward slope. The embankment structure includes a base layer, sub-base, and sub-grade. The road surface is composed of soil (boulder mixed soil) and cut material. The embankment is filled with material, and the shoulder is filled with material. The diagram also shows a datum line at 1088.000m and a vertical height of 3m.

Soil – boulder mixed soil  
 Cut – 2.708m<sup>2</sup>  
 Fill – 1.233m<sup>2</sup>  
 Shoulder Fill – 0.563m<sup>2</sup>  
 Str. Cut – 3.448m<sup>2</sup>  
 Back Fill – 0.638m<sup>2</sup>  
 Base – 0.094m<sup>2</sup>  
 Sub Base – 0.564m<sup>2</sup>  
 Sub Grade – 0.752m<sup>2</sup>

1:1.0.25H  
 -3.00%  
 -3.00%  
 H-3m  
 Datum 1088.000m

Soil – boulder mixed soil  
 Cut – 6.023m  
 Fill – 2.753m  
 Shoulder Fill – 0.563m  
 Str. Cut – 6.205m  
 Back Fill – 2.648m  
 Base – 0.094m  
 Sub Base – 0.564m  
 Sub Grade – 0.752m

1:0.33H

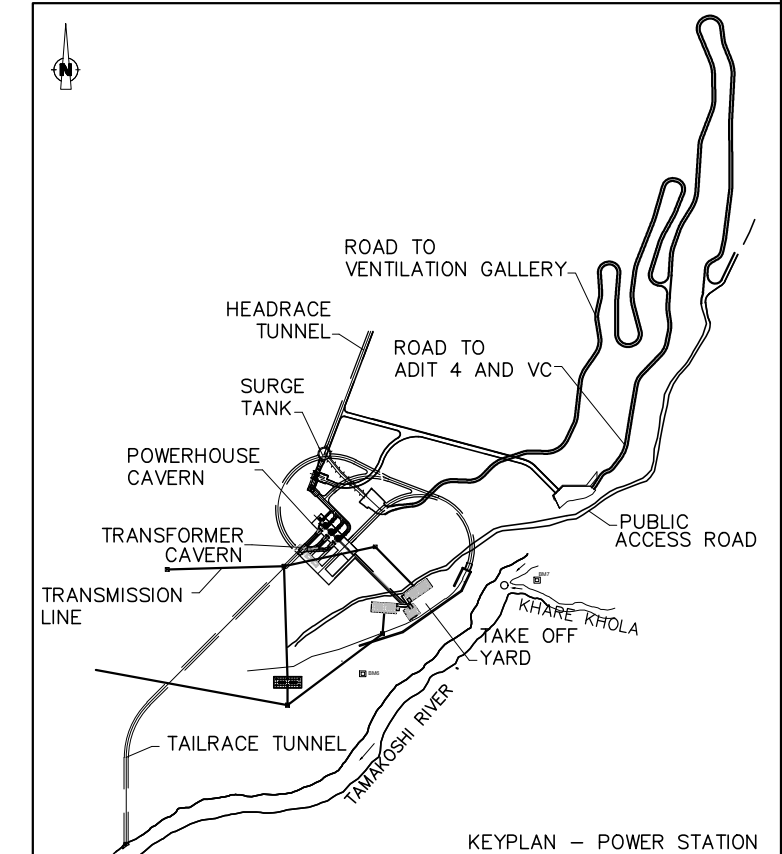
–3.00%      –3.00%

Datum 1090.000m

4.2m

**DRAFT STATUS:**  
 14.11.2018

1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).



Reference Drawings			
Drwg. No.			Title
31-00053-DD-4813-1800			PROJECT ROADS, GENERAL, LAYOUT
Revisions			
	Name	Date	Notes



TAMAKOSHI V HYDROELECTRIC PROJECT  
PROJECT DEVELOPMENT DEPARTMENT  
ENGINEERING SERVICES DIRECTORATE  
NEPAL ELECTRICITY AUTHORITY



CONSULTING ENGINEERS  
BAD VILBEL, GERMANY

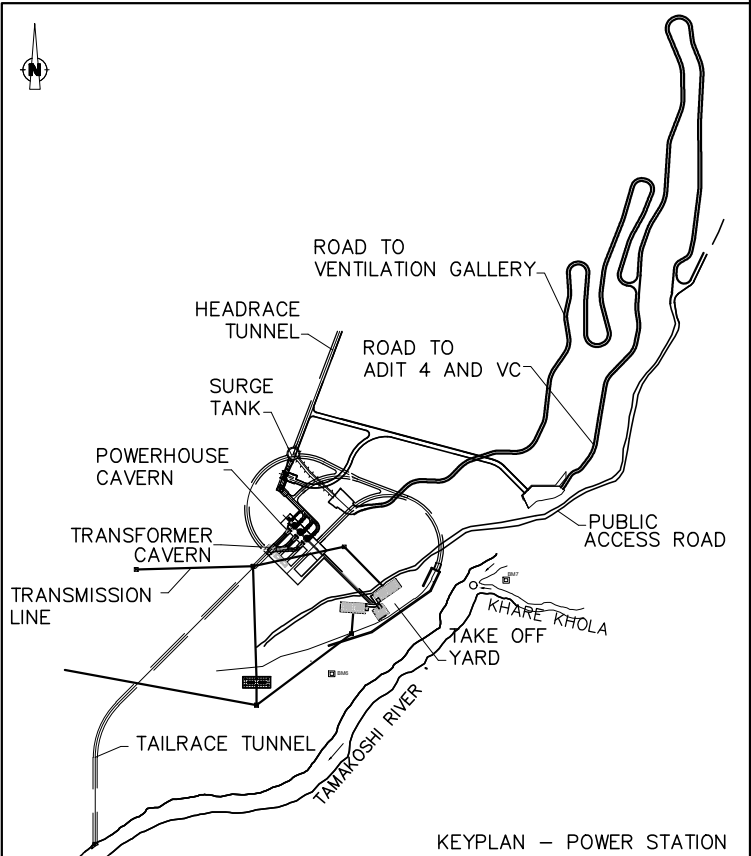
## TAMAKOSHI V HYDROELECTRIC PROJECT DETAILED ENGINEERING DESIGN

	Name	Date	DETAILED DESIGN <u>PROJECT ROADS</u> <u>ROAD TO ADIT 4</u> CROSS SECTION CH 0+180.00–0+260.00 SHEET 3 OF 20 PROJECT DRAWING		
Prepared	B. Khadka	23.10.17			
Drawn	B. Khadka				
Checked	Roloff				
Approved	Dr. Moeller				
Replaces Drwg. No:					
...					
<u>CAD— File No.:</u>					
Scale A3:	1:200	Drwg. No. 31–00053–DD–4813–	Q 1809	REV.	—



NOTES:

1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).



KEYPLAN – POWER STATION

Reference Drawings

Drwg. No.	Title
31-00053-DD-4813-1800	PROJECT ROADS, GENERAL, LAYOUT

Revisions

No.	Name	Date	Notes



TAMAKOSHI V HYDROELECTRIC PROJECT  
PROJECT DEVELOPMENT DEPARTMENT  
ENGINEERING SERVICES DIRECTORATE  
NEPAL ELECTRICITY AUTHORITY



CONSULTING ENGINEERS  
BAD VILBEL, GERMANY

TAMAKOSHI V HYDROELECTRIC PROJECT  
DETAILED ENGINEERING DESIGN

Prepared	Name	Date	DETAILED DESIGN
Drawn	B. Khadka	23.10.17	PROJECT ROADS
Checked	Roloff		ROAD TO ADIT 4
Approved	Dr. Moeller		CROSS SECTION
Replaces Drwg. No:			CH 0+270.00-0+350.00
...			SHEET 4 OF 20
CAD- File No.:			PROJECT DRAWING
Scale A3:	1:200	Drwg. No.: 31-00053-DD-4813- Q 1809	REV. —

CH 0+290.00  
GL 1095.713 m  
DL 1097.688m

Soil – boulder mixed soil  
Cut – 0.350m2  
Fill – 6.353m2  
Shoulder Fill – 0.563m2  
Str. Cut – 8.888m2  
Back Fill – 3.523m2  
Base – 0.094m2  
Sub Base – 0.564m2  
Sub Grade – 0.752m2

Datum 1092.000m

H-5.2m

CH 0+320.00  
GL 1100.640 m  
DL 1099.692m

Soil – boulder mixed soil  
Cut – 17.815m2  
Fill – 0.385m2  
Shoulder Fill – 0.563m2  
Str. Cut – 3.650m2  
Back Fill – 0.810m2  
Base – 0.109m2  
Sub Base – 0.654m2  
Sub Grade – 0.872m2

Datum 1096.000m

H-3m

CH 0+350.00  
GL 1100.694 m  
DL 1101.488m

Soil – boulder mixed soil  
Cut – 4.000m2  
Fill – 4.383m2  
Shoulder Fill – 0.563m2  
Str. Cut – 16.175m2  
Back Fill – 8.523m2  
Base – 0.105m2  
Sub Base – 0.632m2  
Sub Grade – 0.842m2

Datum 1097.000m

H-6.2m

CH 0+280.00  
GL 1095.746 m  
DL 1097.018m

Soil – boulder mixed soil  
Cut – 2.788m2  
Fill – 4.018m2  
Shoulder Fill – 0.563m2  
Str. Cut – 10.548m2  
Back Fill – 4.870m2  
Base – 0.094m2  
Sub Base – 0.564m2  
Sub Grade – 0.752m2

Datum 1092.000m

H-5.2m

CH 0+310.00  
GL 1098.882 m  
DL 1099.027m

Soil – boulder mixed soil  
Cut – 8.813m2  
Fill – 1.420m2  
Shoulder Fill – 0.563m2  
Str. Cut – 4.518m2  
Back Fill – 0.733m2  
Base – 0.109m2  
Sub Base – 0.654m2  
Sub Grade – 0.872m2

Datum 1095.000m

H-4m

CH 0+340.00  
GL 1100.911 m  
DL 1100.924m

Soil – boulder mixed soil  
Cut – 9.468m2  
Fill – 2.093m2  
Shoulder Fill – 0.563m2  
Str. Cut – 7.458m2  
Back Fill – 3.328m2  
Base – 0.094m2  
Sub Base – 0.564m2  
Sub Grade – 0.752m2

Datum 1097.000m

H-4.2m

CH 0+270.00  
GL 1096.105 m  
DL 1096.348m

Soil – boulder mixed soil  
Cut – 8.950m2  
Fill – 1.668m2  
Shoulder Fill – 0.563m2  
Str. Cut – 6.015m2  
Back Fill – 2.560m2  
Base – 0.094m2  
Sub Base – 0.564m2  
Sub Grade – 0.752m2

Datum 1093.000m

H-3.8m

CH 0+300.00  
GL 1096.630 m  
DL 1098.357m

Soil – boulder mixed soil  
Cut – 2.653m2  
Fill – 5.020m2  
Shoulder Fill – 0.563m2  
Str. Cut – 6.698m2  
Back Fill – 2.380m2  
Base – 0.094m2  
Sub Base – 0.564m2  
Sub Grade – 0.752m2

Datum 1093.000m

H-4.6m

CH 0+330.00  
GL 1100.442 m  
DL 1100.325m

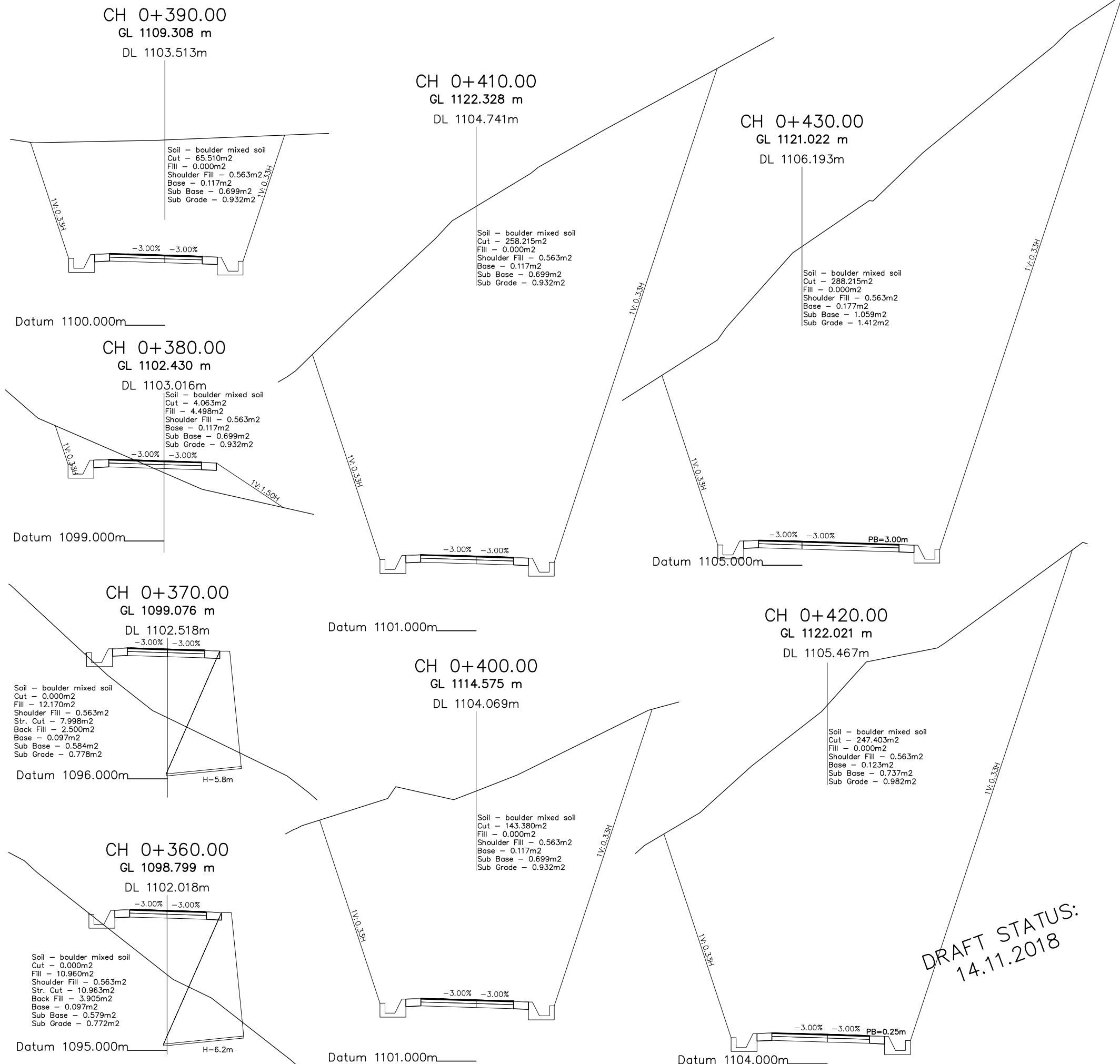
Soil – boulder mixed soil  
Cut – 11.535m2  
Fill – 1.350m2  
Shoulder Fill – 0.563m2  
Str. Cut – 4.103m2  
Back Fill – 0.643m2  
Base – 0.102m2  
Sub Base – 0.614m2  
Sub Grade – 0.818m2

Datum 1097.000m

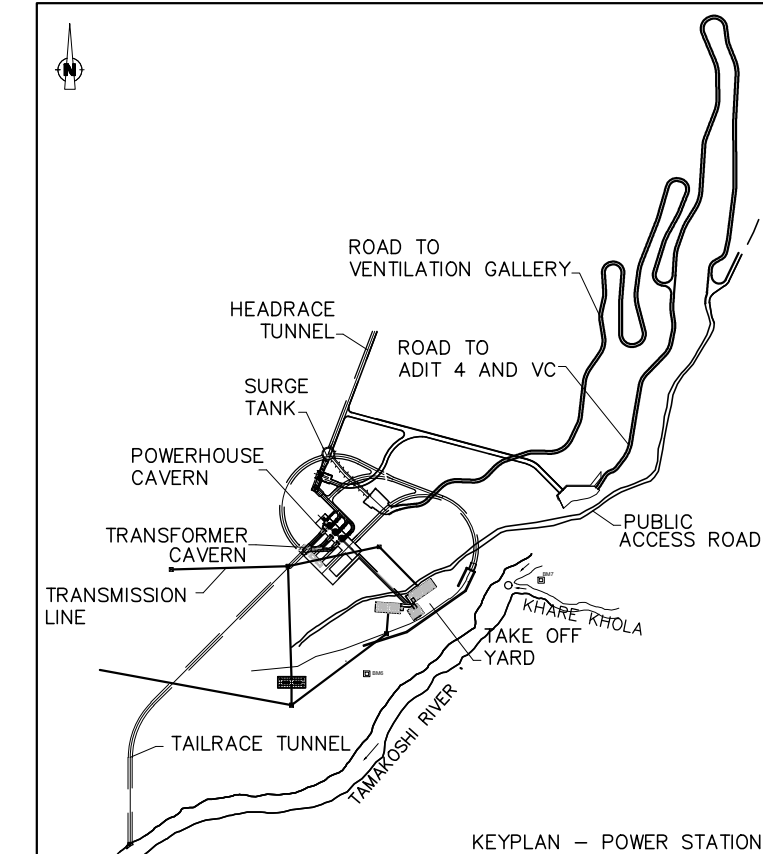
H-4m

DRAFT STATUS:  
14.11.2018





- NOTES:**
1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
  2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
  3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).



Reference Drawings	
Drwg. No.	Title
31-00053-DD-4813-1800	PROJECT ROADS, GENERAL, LAYOUT

Revisions			
	Name	Date	Notes

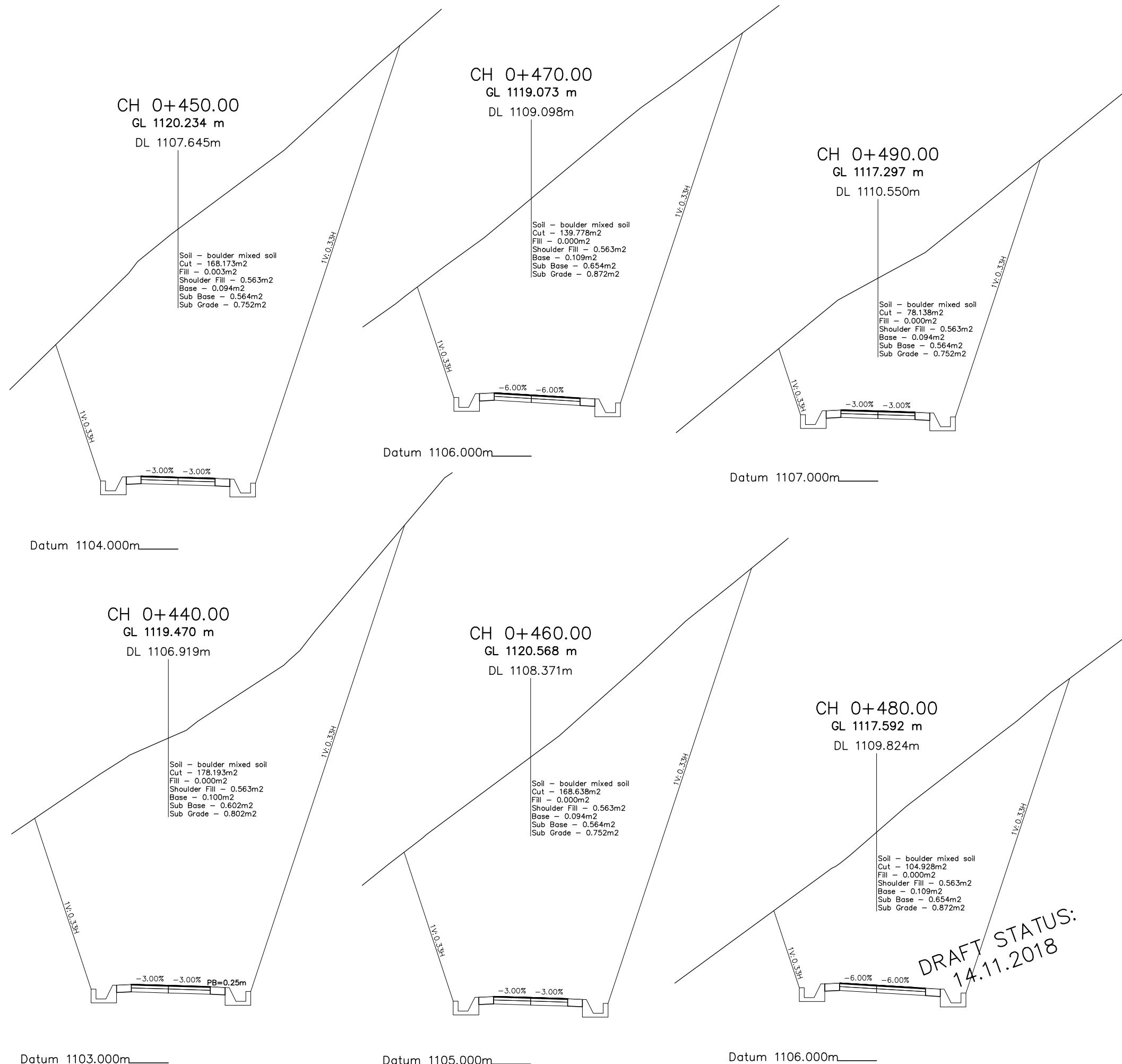
**TAMAKOSHI V HYDROELECTRIC PROJECT**  
PROJECT DEVELOPMENT DEPARTMENT  
ENGINEERING SERVICES DIRECTORATE  
NEPAL ELECTRICITY AUTHORITY

**LAHMEYER INTERNATIONAL**

CONSULTING ENGINEERS  
BAD VILBEL, GERMANY


**TAMAKOSHI V HYDROELECTRIC PROJECT**  
**DETAILED ENGINEERING DESIGN**


		Name	Date	DETAILED DESIGN <b>PROJECT ROADS</b> <b>ROAD TO ADIT 4</b> <b>CROSS SECTION</b> <b>CH 0+360.00-0+430.00</b> SHEET 5 OF 20 PROJECT DRAWING
Prepared	B. Khadka	23.10.17		
Drawn	B. Khadka			
Checked	Roloff			
Approved	Dr. Moeller			
Replaces Drwg. No:	...			
CAD- File No.:				
Scale A3: 1:200				Drwg. No.: 31-00053-DD-4813- Q 1809 REV. -



- NOTES:**
1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
  2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
  3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).

Reference Drawings			
Drwg. No.		Title	
31-00053-DD-4813-1800		PROJECT ROADS, GENERAL, LAYOUT	
Revisions			
	Name	Date	Notes

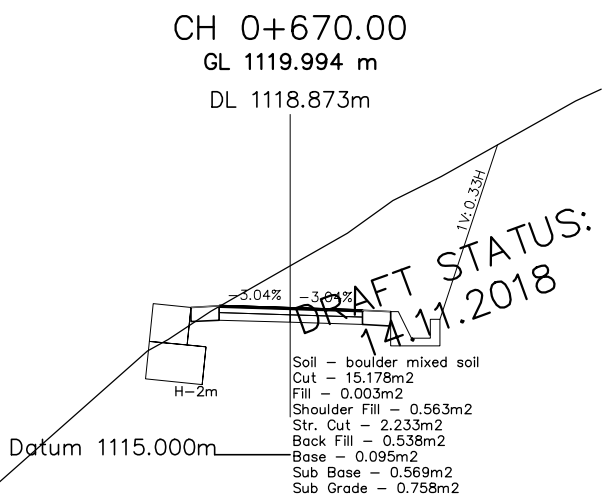
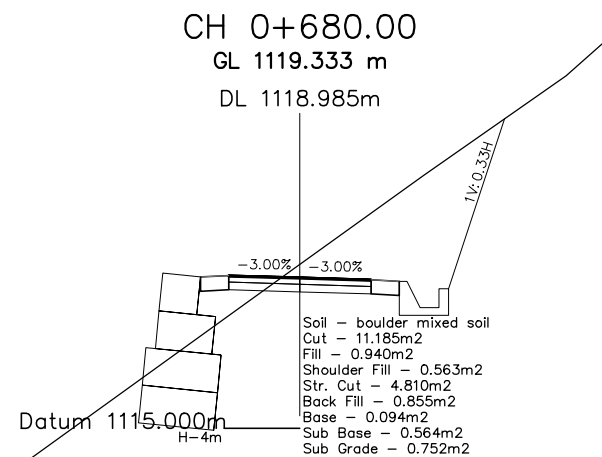
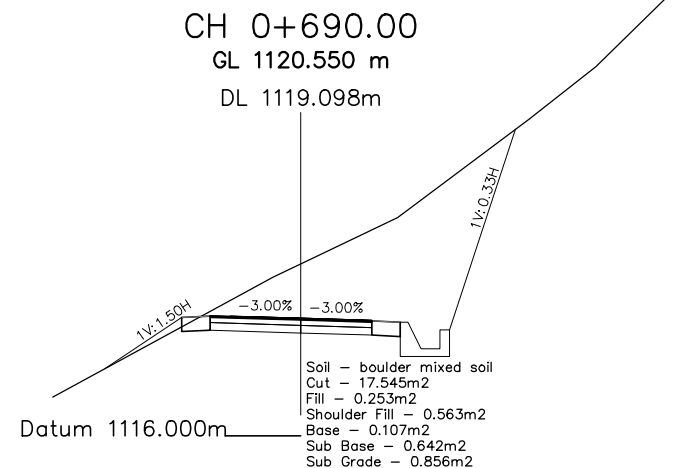
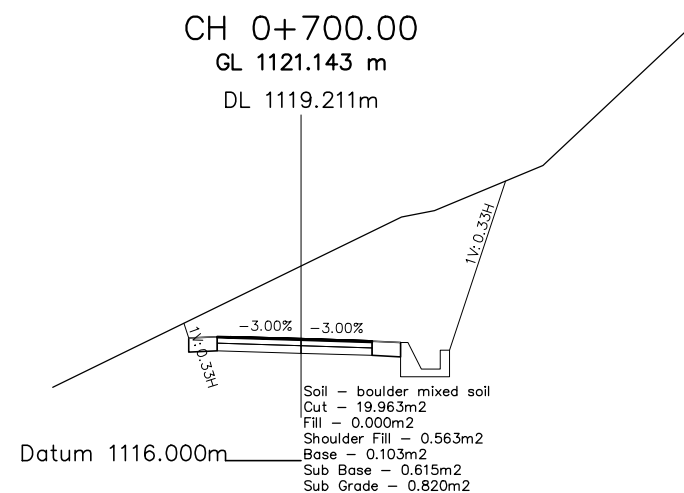
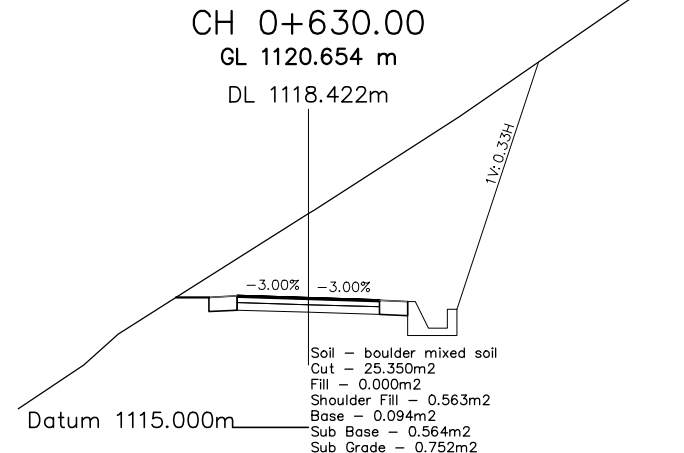
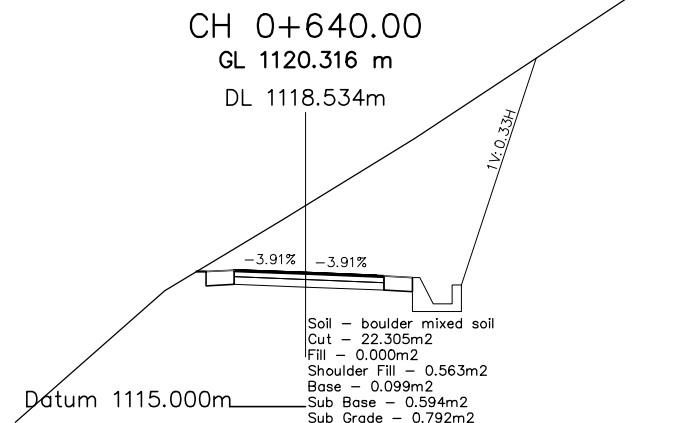
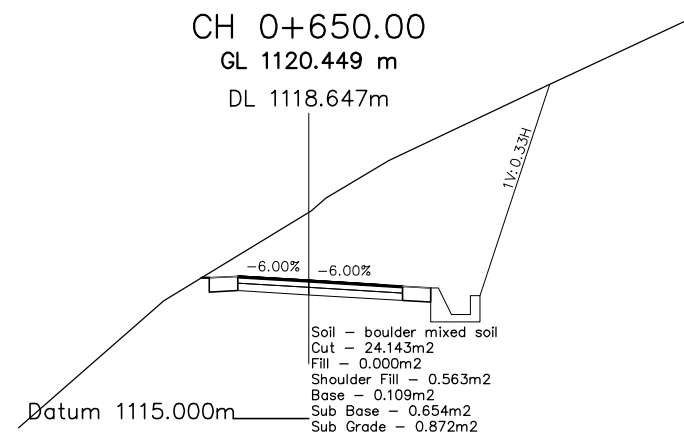
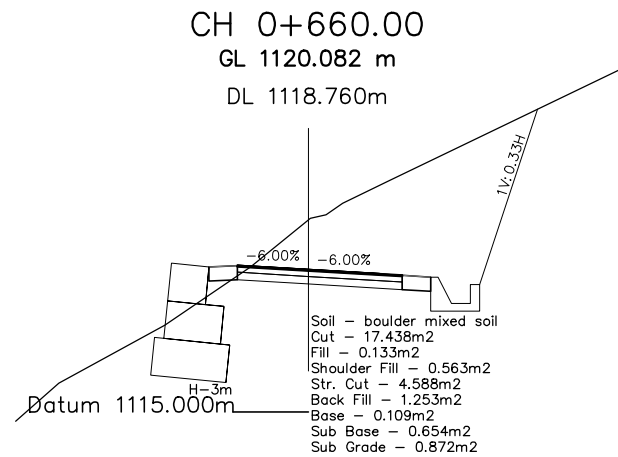
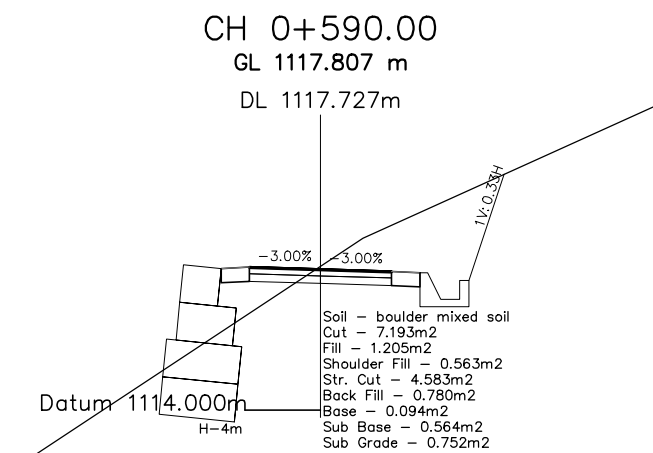
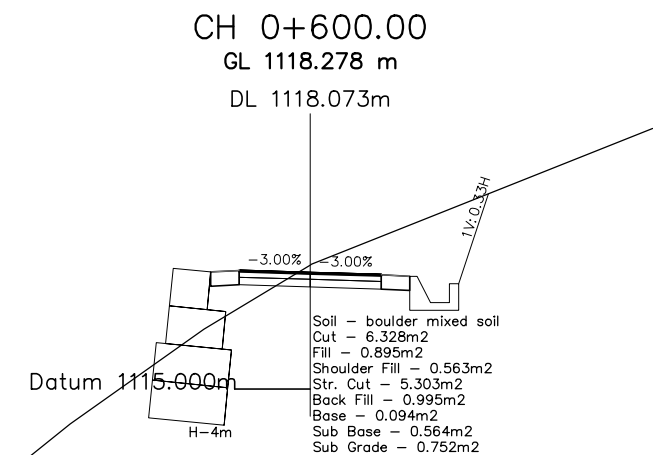
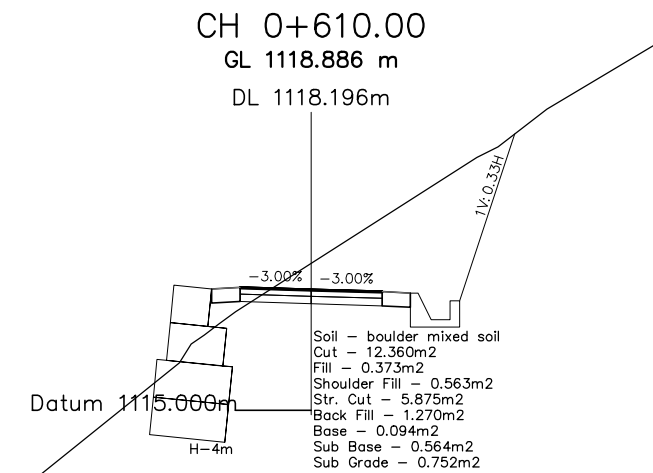
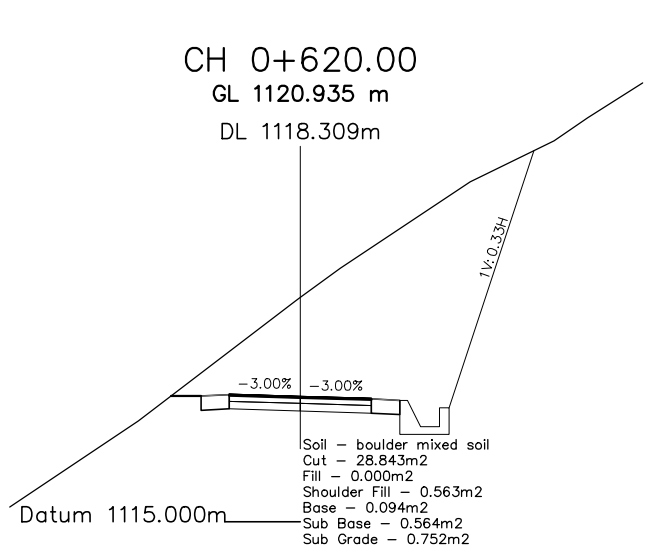
	<b>TAMAKOSHI V HYDROELECTRIC PROJECT</b> <b>PROJECT DEVELOPMENT DEPARTMENT</b> <b>ENGINEERING SERVICES DIRECTORATE</b> <b>NEPAL ELECTRICITY AUTHORITY</b>
---	--

 <b>LAHMEYER</b> INTERNATIONAL	<b>CONSULTING ENGINEERS</b> BAD VILBEL, GERMANY
--	--

<b>TAMAKOSHI V HYDROELECTRIC PROJECT</b> <b>DETAILED ENGINEERING DESIGN</b>			
--	--	--	--

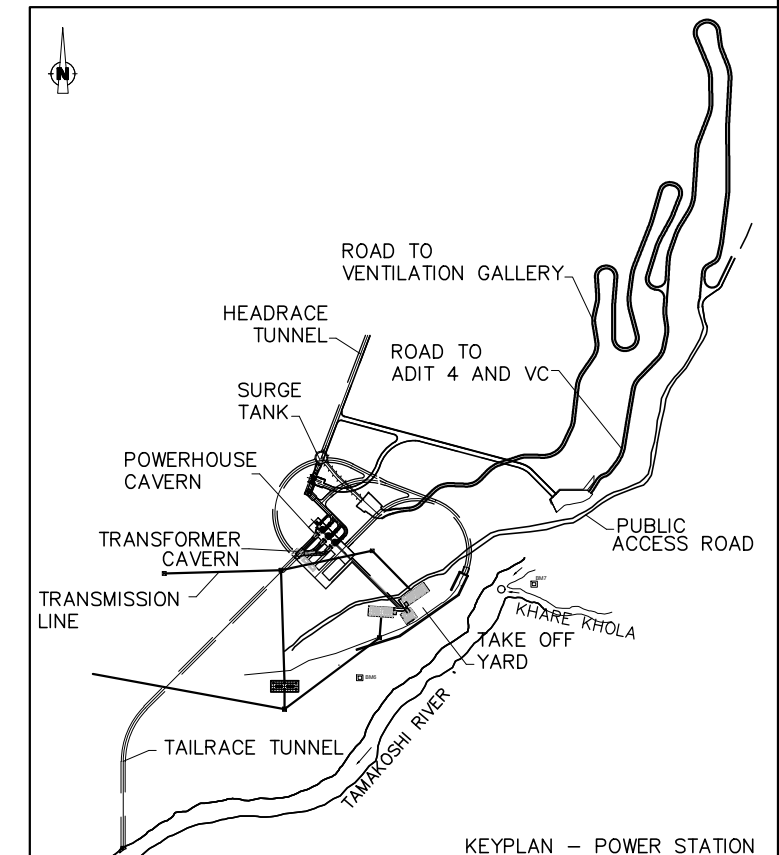
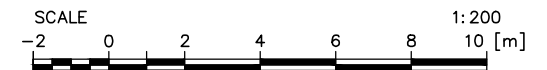
	Name	Date	<b>DETAILED DESIGN</b>  <u>PROJECT ROADS</u>  <u>ROAD TO ADIT 4</u>  CROSS SECTION CH 0+440.00-0+490.00 SHEET 6 OF 20 PROJECT DRAWING		
Prepared	B. Khadka	23.10.17			
Drawn	B. Khadka				
Checked	Roloff				
Approved	Dr. Moeller				
Replaces Drwg. No:					
...					
CAD- File No.:					
Scale A3: 1:200			Drwg. No.: 31-00053-DD-4813-Q 1809	REV.	—





#### NOTES:

1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).



Reference Drawings	
Drwg. No.	Title
31-00053-DD-4813-1800	PROJECT ROADS, GENERAL, LAYOUT

Revisions			
	Name	Date	Notes

**TAMAKOSHI V HYDROELECTRIC PROJECT**  
PROJECT DEVELOPMENT DEPARTMENT  
ENGINEERING SERVICES DIRECTORATE  
NEPAL ELECTRICITY AUTHORITY

**LAHMEYER INTERNATIONAL**

CONSULTING ENGINEERS  
BAD VILBEL, GERMANY

### TAMAKOSHI V HYDROELECTRIC PROJECT DETAILED ENGINEERING DESIGN

Name			Date	DETAILED DESIGN <b>PROJECT ROADS</b> <b>ROAD TO ADIT 4</b> <b>CROSS SECTION</b> <b>CH 0+590.00-0+700.00</b> SHEET 8 OF 20 PROJECT DRAWING
Prepared	B. Khadka		23.10.17	
Drawn	B. Khadka			
Checked	Roloff			
Approved	Dr. Moeller			
Replaces Drwg. No:				
...				
CAD- File No.:				
Scale A3:			1:200	
Drwg. No.:			31-00053-DD-4813-Q 1809	REV. -

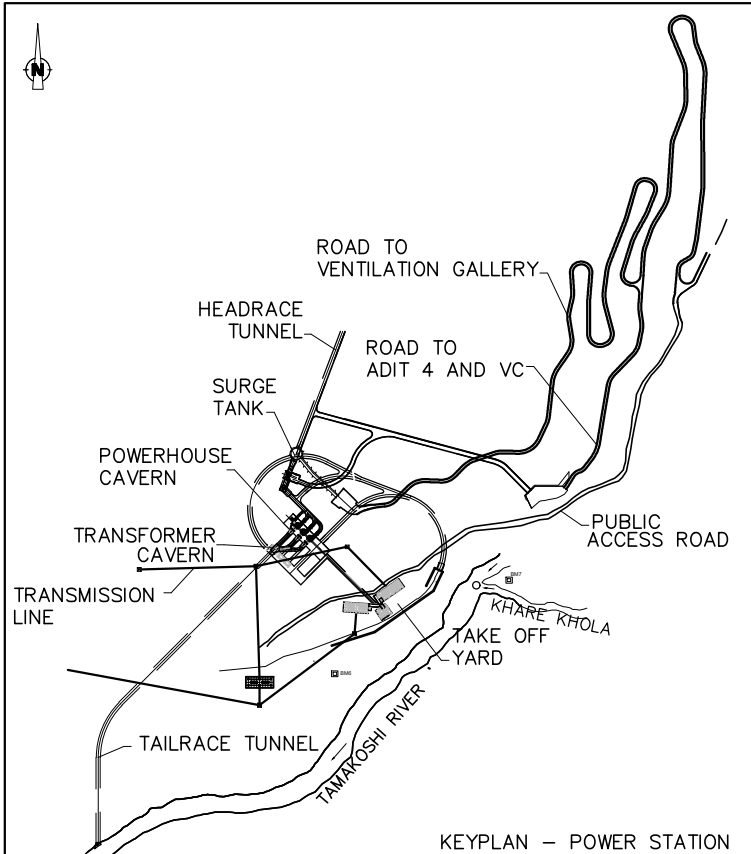








NOTES:

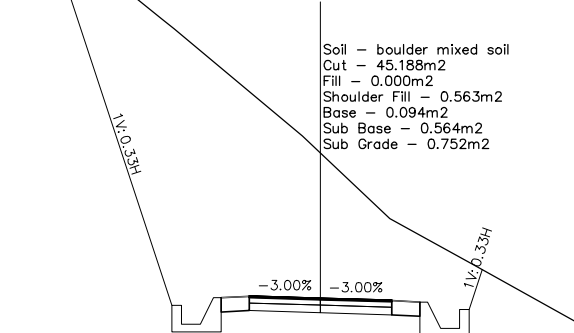
1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).



Reference Drawings				
Drwg. No.				Title
31-00053-DD-4813-1800				PROJECT ROADS, GENERAL, LAYOUT
Revisions				

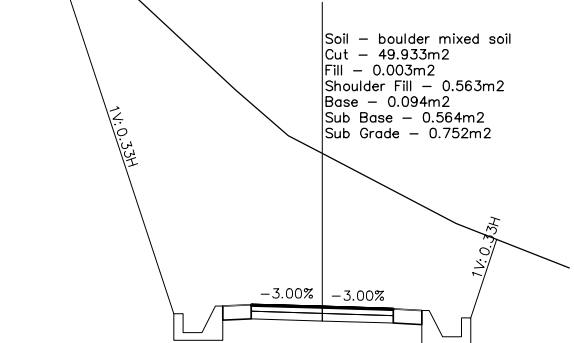
			<b>TAMAKOSHI V HYDROELECTRIC PROJECT</b> <b>PROJECT DEVELOPMENT DEPARTMENT</b> <b>ENGINEERING SERVICES DIRECTORATE</b> <b>NEPAL ELECTRICITY AUTHORITY</b>			
		<b>LAHMEYER</b> <b>INTERNATIONAL</b>		<b>CONSULTING ENGINEERS</b> <b>BAD VILBEL, GERMANY</b>		
<b>TAMAKOSHI V HYDROELECTRIC PROJECT</b> <b>DETAILED ENGINEERING DESIGN</b>						
	Name	Date	DETAILED DESIGN			
Prepared	B. Khadka	23.10.17	<u><b>PROJECT ROADS</b></u> <u><b>ROAD TO ADIT 4</b></u> <b>CROSS SECTION</b> <b>CH 0+820.00–0+920.00</b> SHEET 10 OF 20 PROJECT DRAWING			
Drawn	B. Khadka					
Checked	Roloff					
Approved	Dr. Moeller					
Replaces Drwg. No: ...						
<u>CAD– File No.:</u>						
Scale A3:	1:200		Drwg. No.: 31–00053–DD–4813–	<b>Q 1809</b>	REV.	–

CH 0+840.00  
GL 1129.385 m  
DL 1125.537m



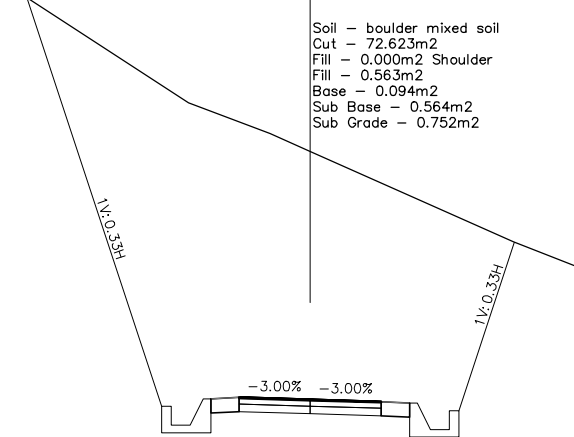
Datum 1122.000m

CH 0+830.00  
GL 1128.803 m  
DL 1124.746m



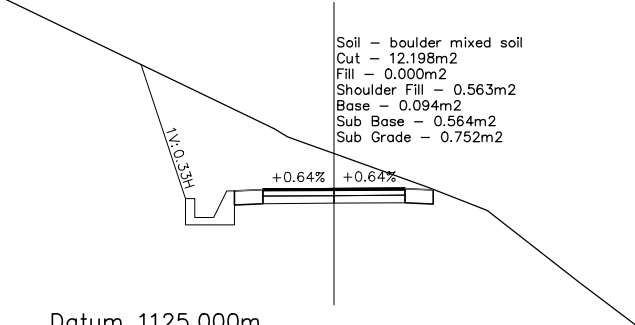
Datum 1121.000m

CH 0+820.00  
GL 1130.516 m  
DL 1123.955m



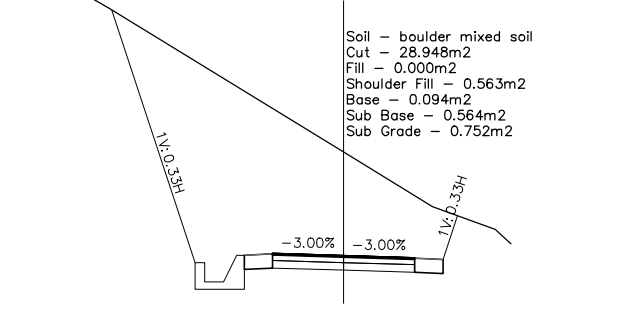
Datum 1120.000m

CH 0+880.00  
GL 1129.640 m  
DL 1128.702m



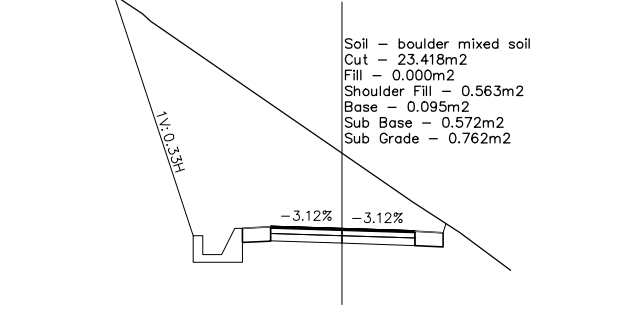
Datum 1125.000m

CH 0+870.00  
GL 1130.663 m  
DL 1127.911m



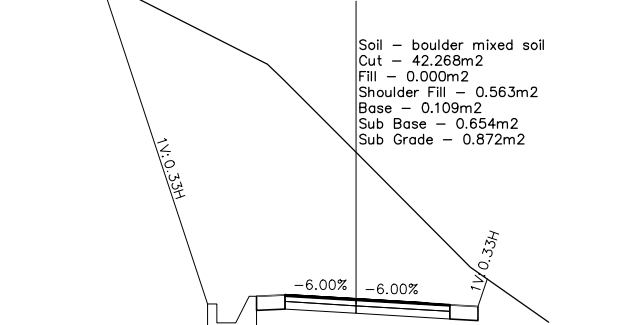
Datum 1124.000m

CH 0+860.00  
GL 1129.127 m  
DL 1127.120m



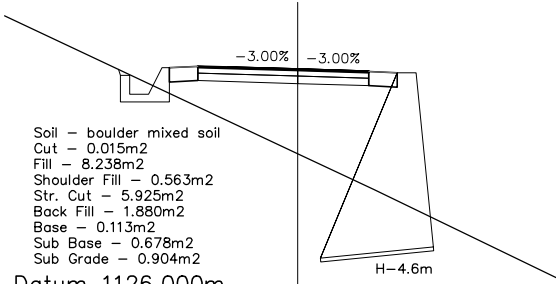
Datum 1124.000m

CH 0+850.00  
GL 1130.210 m  
DL 1126.328m



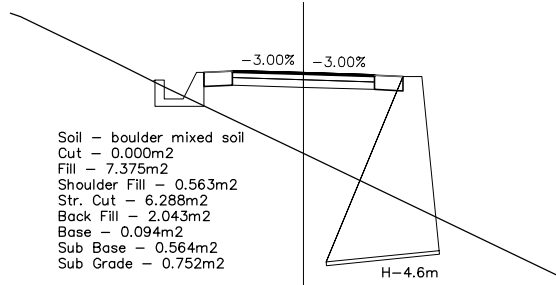
Datum 1123.000m

CH 0+920.00  
GL 1129.635 m  
DL 1131.866m



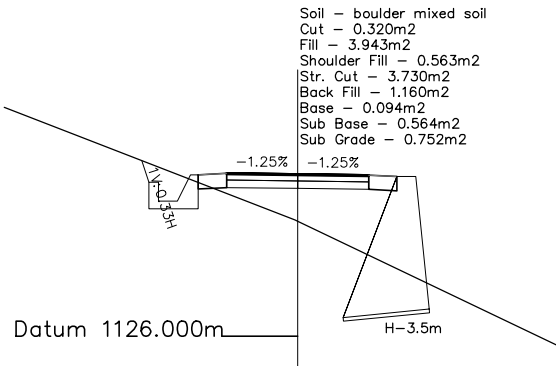
Datum 1126.000m

CH 0+910.00  
GL 1128.949 m  
DL 1131.075m



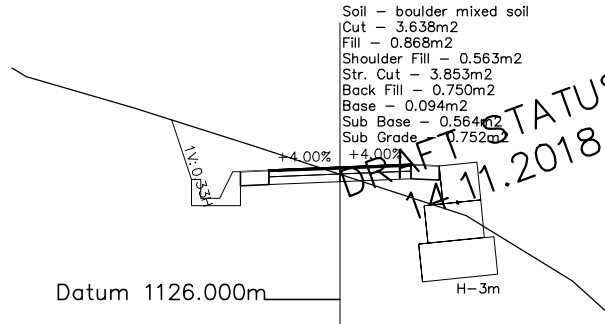
Datum 1125.000m

CH 0+900.00  
GL 1129.042 m  
DL 1130.284m



Datum 1126.000m

CH 0+890.00  
GL 1129.316 m  
DL 1129.493m

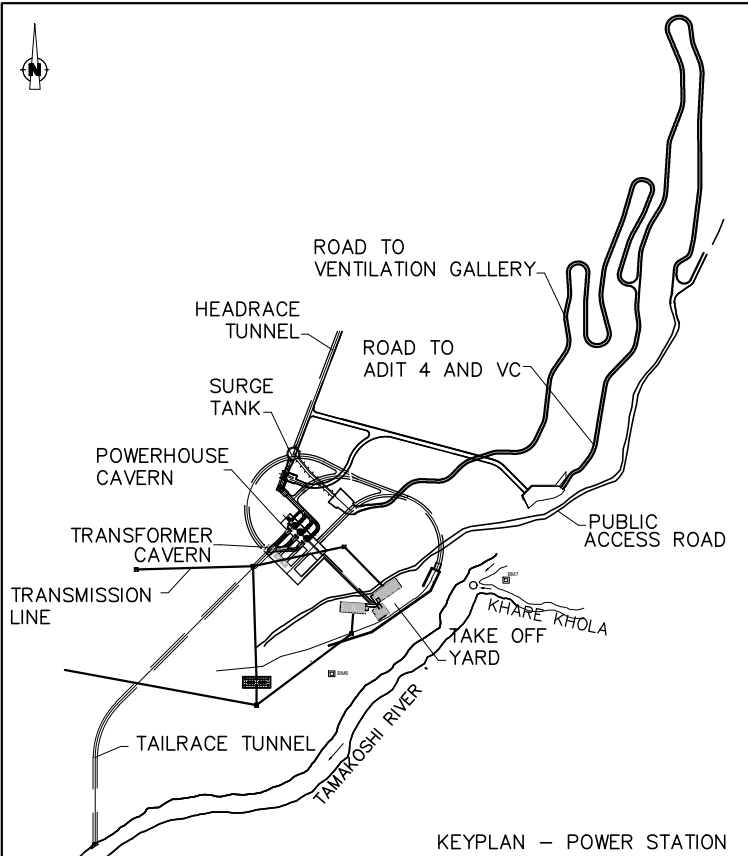


Datum 1126.000m

DRAFT STATUS:  
14.11.2018

NOTES:

1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).



KEYPLAN – POWER STATION

Reference Drawings

Drwg. No.	Title
31-00053-DD-4813-1800	PROJECT ROADS, GENERAL, LAYOUT

Revisions

No.	Name	Date	Notes



TAMAKOSHI V HYDROELECTRIC PROJECT  
PROJECT DEVELOPMENT DEPARTMENT  
ENGINEERING SERVICES DIRECTORATE  
NEPAL ELECTRICITY AUTHORITY



CONSULTING ENGINEERS  
BAD VILBEL, GERMANY

TAMAKOSHI V HYDROELECTRIC PROJECT  
DETAILED ENGINEERING DESIGN

Prepared	Name	Date	DETAILED DESIGN
Drawn	B. Khadka	23.10.17	PROJECT ROADS
Checked	Roloff		ROAD TO ADIT 4
Approved	Dr. Moeller		CROSS SECTION
Replaces Drwg. No:			CH 0+930.00–1+010.00
...			SHEET 11 OF 20
CAD- File No.:			PROJECT DRAWING
Scale A3:	1:200	Drwg. No.: 31-00053-DD-4813- Q 1809	REV. —

CH 0+950.00  
GL 1140.566 m  
DL 1134.239m

Soil – boulder mixed soil  
Cut – 70.288m2  
Fill – 0.000m2  
Shoulder Fill – 0.563m2  
Base – 0.117m2  
Sub Base – 0.699m2  
Sub Grade – 0.932m2

Datum 1132.000m

CH 0+980.00  
GL 1140.926 m  
DL 1136.612m

Soil – boulder mixed soil  
Cut – 46.218m2  
Fill – 0.003m2  
Shoulder Fill – 0.563m2  
Base – 0.094m2  
Sub Base – 0.564m2  
Sub Grade – 0.752m2

Datum 1133.000m

CH 1+010.00  
GL 1142.486 m  
DL 1138.984m

Soil – boulder mixed soil  
Cut – 35.800m2  
Fill – 0.000m2  
Shoulder Fill – 0.563m2  
Base – 0.094m2  
Sub Base – 0.564m2  
Sub Grade – 0.752m2

Datum 1135.000m

CH 0+940.00  
GL 1136.513 m  
DL 1133.448m

Soil – boulder mixed soil  
Cut – 31.963m2  
Fill – 0.005m2  
Shoulder Fill – 0.563m2  
Base – 0.117m2  
Sub Base – 0.699m2  
Sub Grade – 0.932m2

Datum 1132.000m

CH 0+970.00  
GL 1141.028 m  
DL 1135.821m

Soil – boulder mixed soil  
Cut – 58.573m2  
Fill – 0.000m2  
Shoulder Fill – 0.563m2  
Base – 0.094m2  
Sub Base – 0.564m2  
Sub Grade – 0.752m2

Datum 1132.000m

CH 1+000.00  
GL 1140.963 m  
DL 1138.194m

Soil – boulder mixed soil  
Cut – 30.873m2  
Fill – 0.000m2  
Shoulder Fill – 0.563m2  
Base – 0.094m2  
Sub Base – 0.564m2  
Sub Grade – 0.752m2

Datum 1135.000m

CH 0+930.00  
GL 1132.312 m  
DL 1132.657m

Soil – boulder mixed soil  
Cut – 3.495m2  
Fill – 4.093m2  
Shoulder Fill – 0.563m2  
Base – 0.117m2  
Sub Base – 0.699m2  
Sub Grade – 0.932m2

Datum 1129.000m

CH 0+960.00  
GL 1141.102 m  
DL 1135.030m

Soil – boulder mixed soil  
Cut – 74.175m2  
Fill – 0.000m2  
Shoulder Fill – 0.563m2  
Base – 0.112m2  
Sub Base – 0.669m2  
Sub Grade – 0.892m2

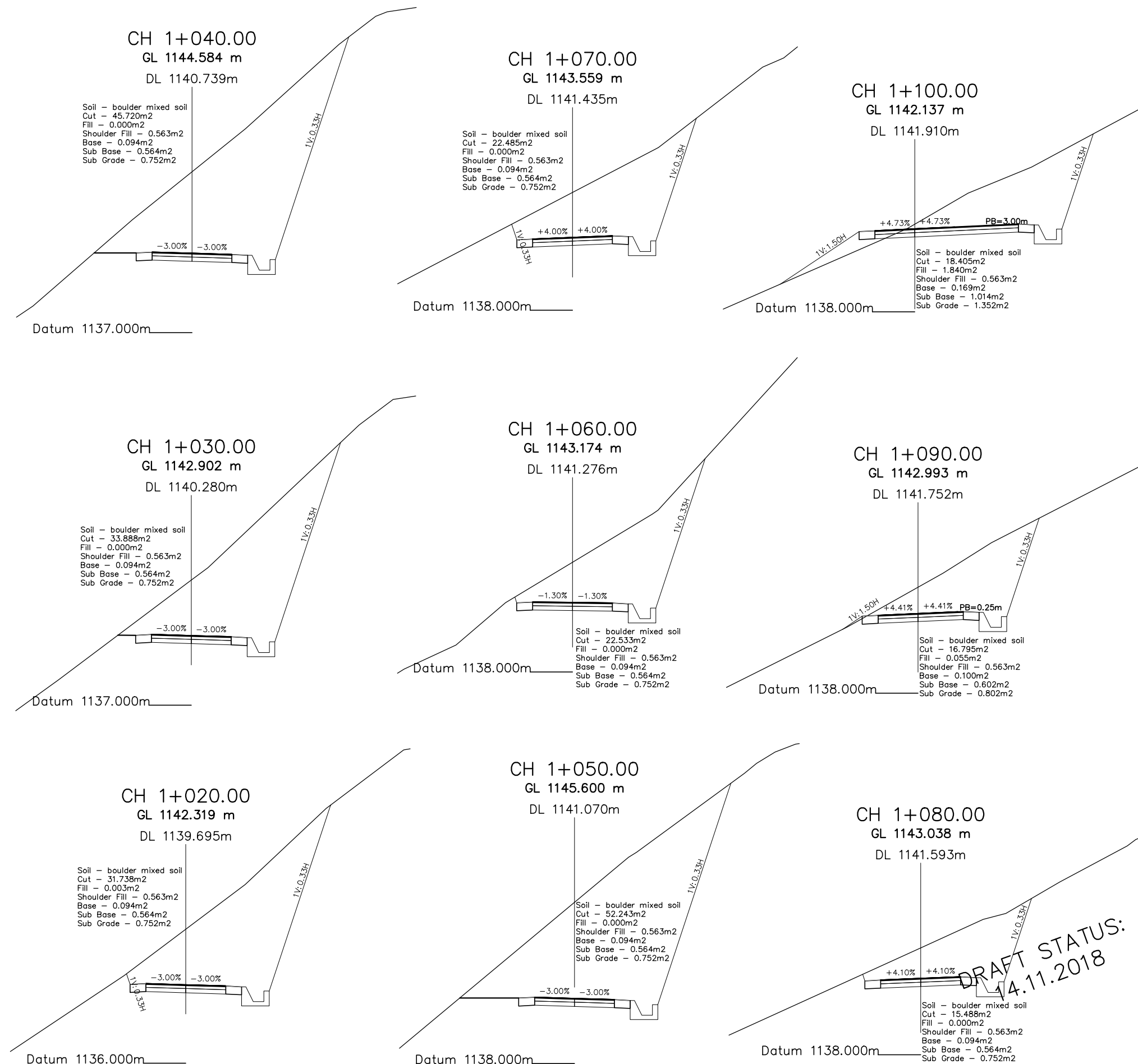
Datum 1133.000m

CH 0+990.00  
GL 1139.555 m  
DL 1137.403m

Soil – boulder mixed soil  
Cut – 27.565m2  
Fill – 0.000m2  
Shoulder Fill – 0.563m2  
Base – 0.094m2  
Sub Base – 0.564m2  
Sub Grade – 0.752m2

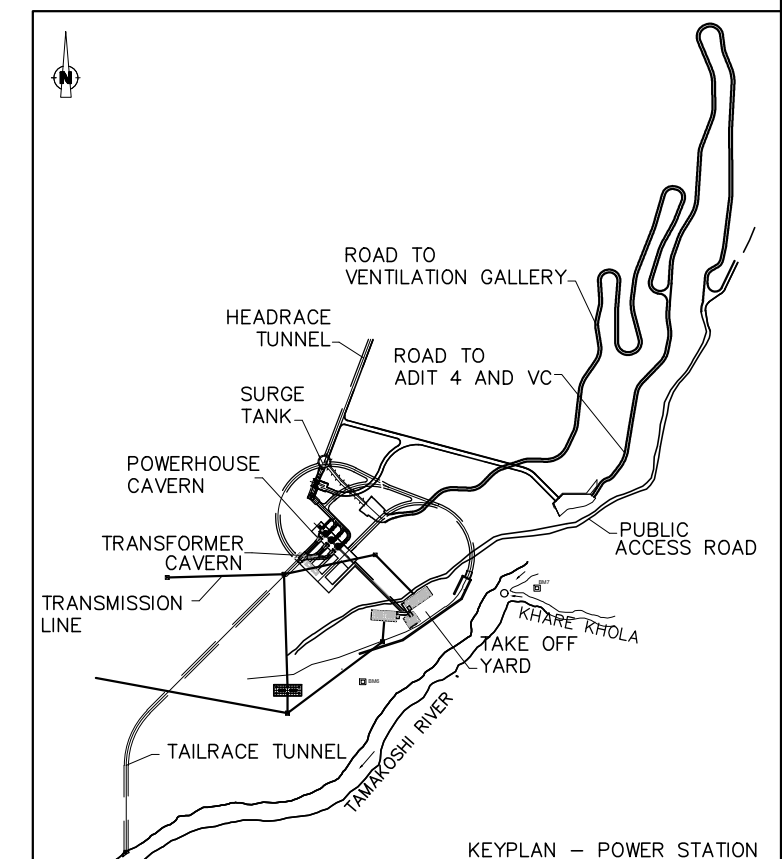
Datum 1134.000m

DRAFT STATUS:  
14.11.2018





NOTES:

1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).

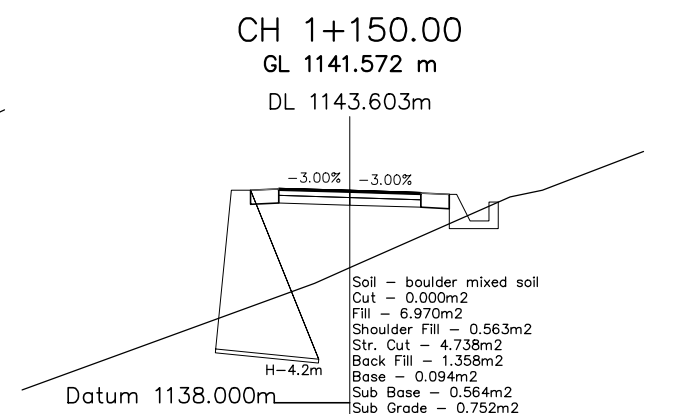
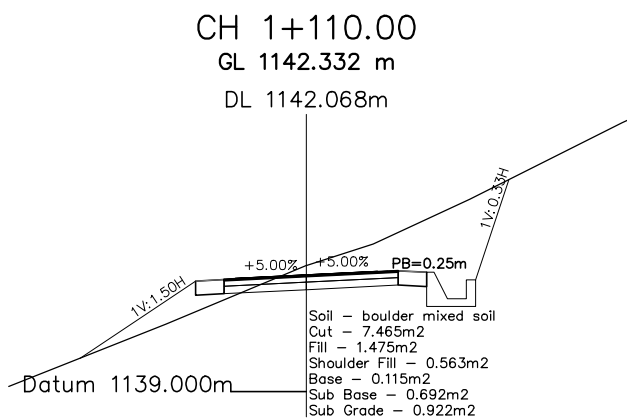
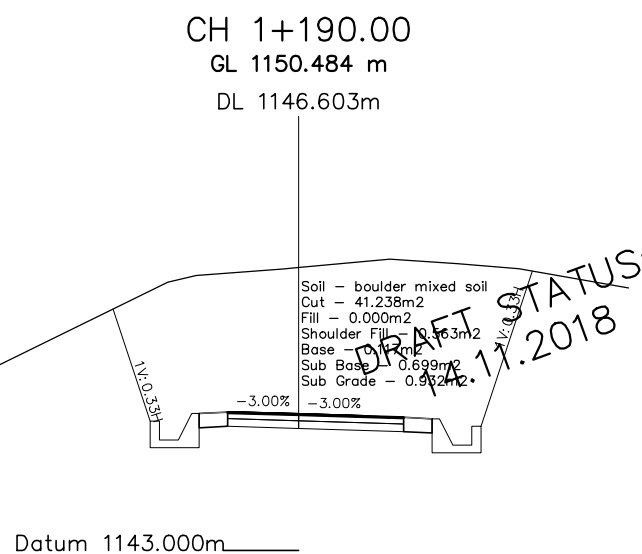
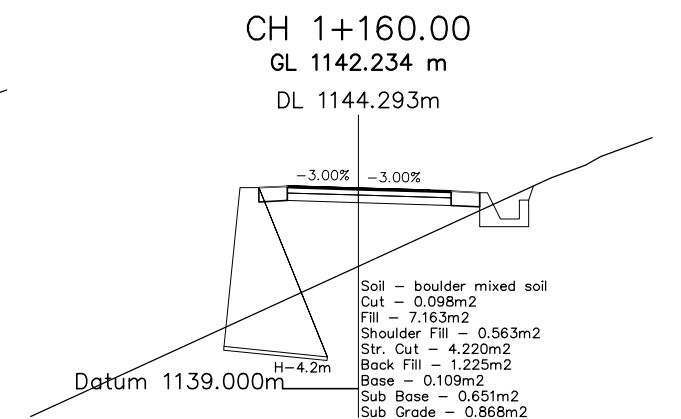
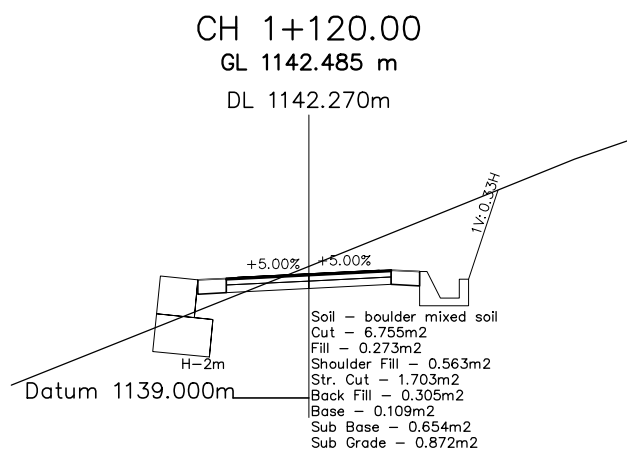
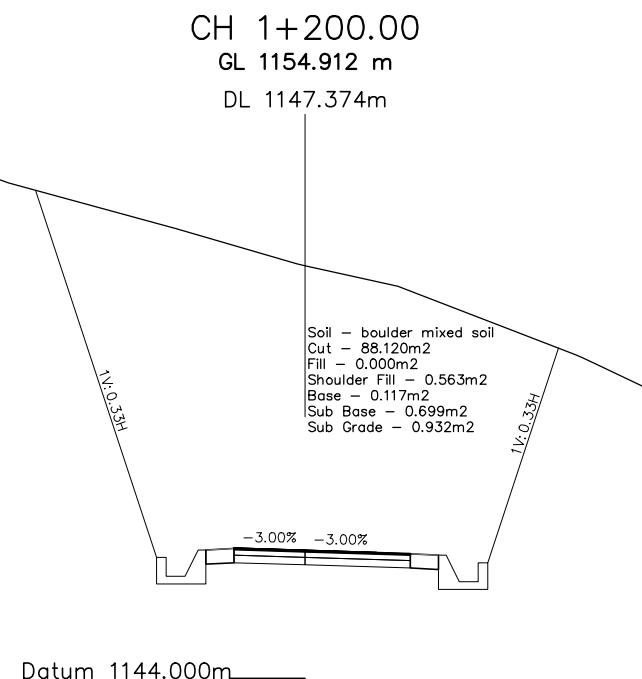
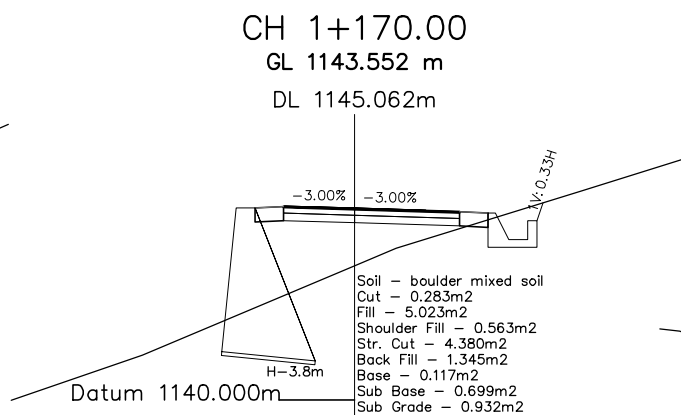
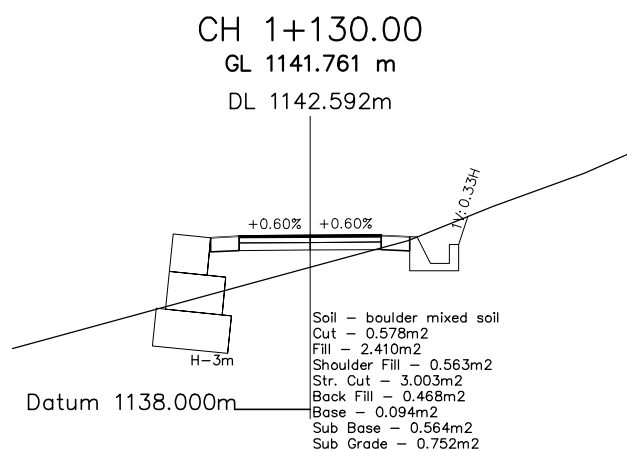
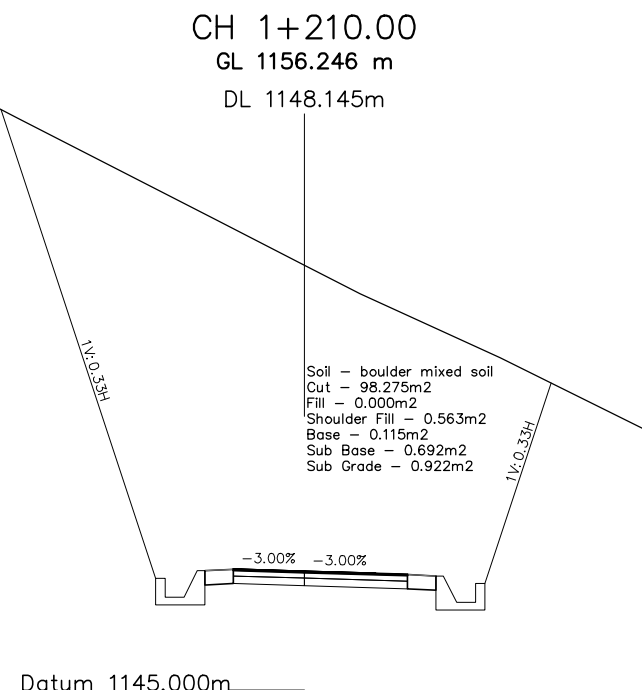
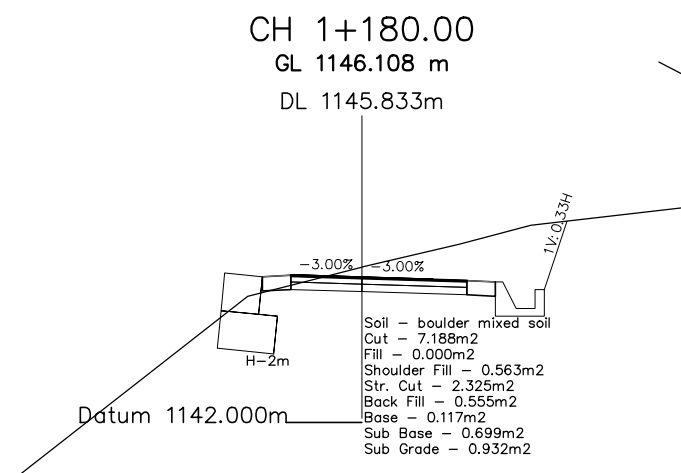
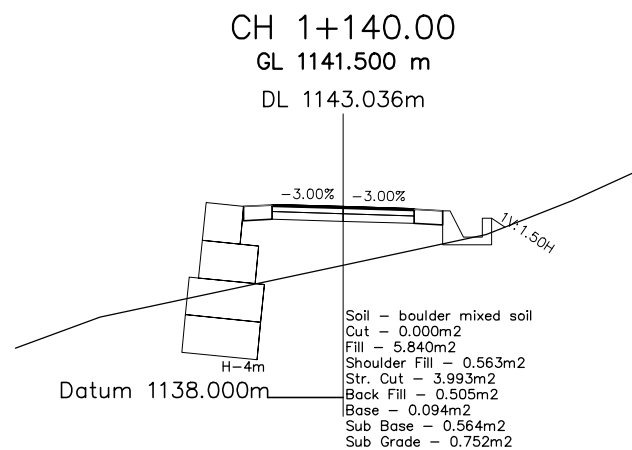


Reference Drawings			
Drwg. No.		Title	
31-00053-DD-4813-1800		PROJECT ROADS, GENERAL, LAYOUT	
Revisions			
	Name	Date	Notes

	<b>TAMAKOSHI V HYDROELECTRIC PROJECT</b> <b>PROJECT DEVELOPMENT DEPARTMENT</b> <b>ENGINEERING SERVICES DIRECTORATE</b> <b>NEPAL ELECTRICITY AUTHORITY</b>
---	--

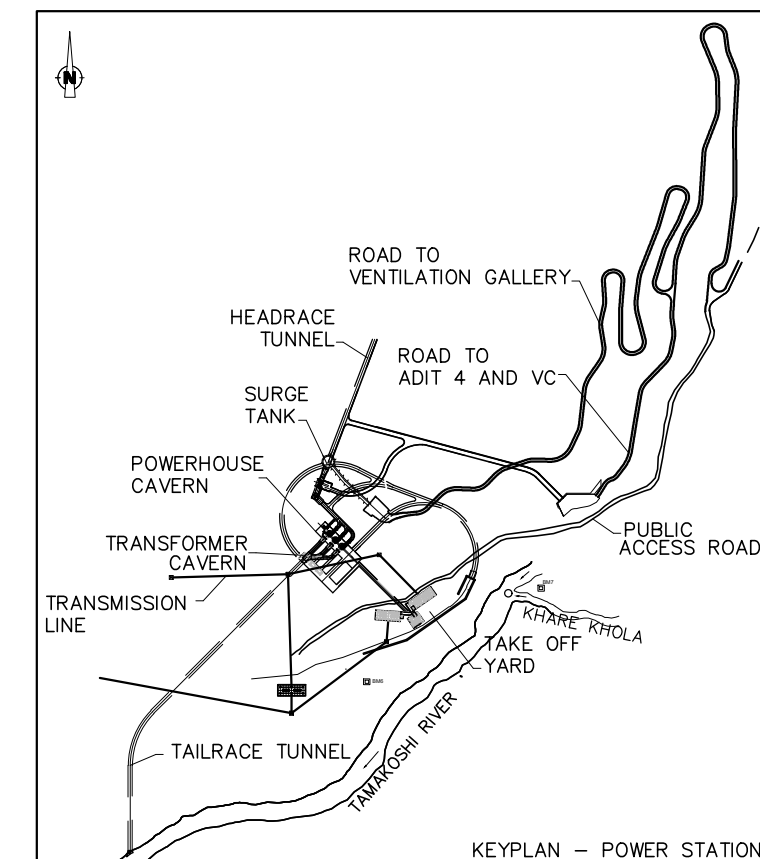
 <b>LAHMEYER INTERNATIONAL</b>	<b>CONSULTING ENGINEERS BAD VILBEL, GERMANY</b>
---	---

<b>TAMAKOSHI V HYDROELECTRIC PROJECT</b> <b>DETAILED ENGINEERING DESIGN</b>			
	Name	Date	<b>DETAILED DESIGN</b>  <u>PROJECT ROADS</u>  <u>ROAD TO ADIT 4</u>  CROSS SECTION CH 1+020.00-1+100.00 SHEET 12 OF 20 PROJECT DRAWING
Prepared	B. Khadka	23.10.17	
Drawn	B. Khadka		
Checked	Roloff		
Approved	Dr. Moeller		
Replaces Drwg. No:			
...			
CAD- File No.:			
Scale A3: 1:200			Drwg. No.: 31-00053-DD-4813-Q 1809
			REV. —



NOTES:

1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).



Reference Drawings	
Drwg. No.	Title
31-00053-DD-4813-1800	PROJECT ROADS, GENERAL, LAYOUT

Revisions			
	Name	Date	Notes



TAMAKOSHI V HYDROELECTRIC PROJECT  
PROJECT DEVELOPMENT DEPARTMENT  
ENGINEERING SERVICES DIRECTORATE  
NEPAL ELECTRICITY AUTHORITY



CONSULTING ENGINEERS  
BAD VILBEL, GERMANY

## TAMAKOSHI V HYDROELECTRIC PROJECT DETAILED ENGINEERING DESIGN

	Name	Date	DETAILED DESIGN	
Prepared	B. Khadka	23.10.17	<u>PROJECT ROADS</u> <u>ROAD TO ADIT 4</u> <u>CROSS SECTION</u> <u>CH 1+110.00–1+210.00</u> SHEET 13 OF 20 PROJECT DRAWING	
Drawn	B. Khadka			
Checked	Roloff			
Approved	Dr. Moeller			
Replaces Dwg. No: ...				
CAD– File No.:				
Scale A3: 1:200			Dwg. No.: 31–00053–DD–4813– <b>Q 1809</b> REV. 1	



CH 1+250.00

GL 1151.121 m

DL 1151.227m

Soil - boulder mixed soil  
Cut - 5.883m<sup>2</sup>  
Fill - 1.068m<sup>2</sup>  
Shoulder Fill - 0.563m<sup>2</sup>  
Str. Cut - 3.043m<sup>2</sup>  
Back Fill - 0.518m<sup>2</sup>  
Base - 0.094m<sup>2</sup>  
Sub Base - 0.564m<sup>2</sup>  
Sub Grade - 0.752m<sup>2</sup>

Datum 1148.000m

CH 1+240.00

GL 1151.301 m

DL 1150.457m

Soil - boulder mixed soil  
Cut - 10.768m<sup>2</sup>  
Fill - 0.013m<sup>2</sup>  
Shoulder Fill - 0.563m<sup>2</sup>  
Base - 0.094m<sup>2</sup>  
Sub Base - 0.564m<sup>2</sup>  
Sub Grade - 0.752m<sup>2</sup>

Datum 1147.000m

CH 1+230.00

GL 1152.115 m

DL 1149.686m

Soil - boulder mixed soil  
Cut - 24.425m<sup>2</sup>  
Fill - 0.000m<sup>2</sup>  
Shoulder Fill - 0.563m<sup>2</sup>  
Base - 0.094m<sup>2</sup>  
Sub Base - 0.564m<sup>2</sup>  
Sub Grade - 0.752m<sup>2</sup>

Datum 1146.000m

CH 1+220.00

GL 1154.229 m

DL 1148.915m

Soil - boulder mixed soil  
Cut - 56.825m<sup>2</sup>  
Fill - 0.000m<sup>2</sup>  
Shoulder Fill - 0.563m<sup>2</sup>  
Base - 0.094m<sup>2</sup>  
Sub Base - 0.564m<sup>2</sup>  
Sub Grade - 0.752m<sup>2</sup>

Datum 1146.000m

CH 1+280.00

GL 1152.937 m

DL 1153.540m

Soil - boulder mixed soil  
Cut - 3.178m<sup>2</sup>  
Fill - 2.218m<sup>2</sup>  
Shoulder Fill - 0.563m<sup>2</sup>  
Str. Cut - 3.760m<sup>2</sup>  
Back Fill - 0.478m<sup>2</sup>  
Base - 0.094m<sup>2</sup>  
Sub Base - 0.564m<sup>2</sup>  
Sub Grade - 0.752m<sup>2</sup>

Datum 1149.000m

CH 1+270.00

GL 1151.776 m

DL 1152.769m

Soil - boulder mixed soil  
Cut - 3.958m<sup>2</sup>  
Fill - 3.638m<sup>2</sup>  
Shoulder Fill - 0.563m<sup>2</sup>  
Str. Cut - 2.735m<sup>2</sup>  
Back Fill - 0.235m<sup>2</sup>  
Base - 0.094m<sup>2</sup>  
Sub Base - 0.564m<sup>2</sup>  
Sub Grade - 0.752m<sup>2</sup>

Datum 1148.000m

CH 1+260.00

GL 1151.606 m

DL 1151.998m

Soil - boulder mixed soil  
Cut - 4.080m<sup>2</sup>  
Fill - 1.540m<sup>2</sup>  
Shoulder Fill - 0.563m<sup>2</sup>  
Str. Cut - 2.468m<sup>2</sup>  
Back Fill - 0.360m<sup>2</sup>  
Base - 0.094m<sup>2</sup>  
Sub Base - 0.564m<sup>2</sup>  
Sub Grade - 0.752m<sup>2</sup>

Datum 1148.000m

CH 1+310.00

GL 1161.544 m

DL 1155.852m

Soil - boulder mixed soil  
Cut - 68.470m<sup>2</sup>  
Fill - 0.000m<sup>2</sup>  
Shoulder Fill - 0.563m<sup>2</sup>  
Base - 0.117m<sup>2</sup>  
Sub Base - 0.699m<sup>2</sup>  
Sub Grade - 0.932m<sup>2</sup>

Datum 1152.000m

CH 1+300.00

GL 1154.439 m

DL 1155.081m

Soil - boulder mixed soil  
Cut - 3.403m<sup>2</sup>  
Fill - 4.583m<sup>2</sup>  
Shoulder Fill - 0.563m<sup>2</sup>  
Base - 0.117m<sup>2</sup>  
Sub Base - 0.699m<sup>2</sup>  
Sub Grade - 0.932m<sup>2</sup>

Datum 1151.000m

CH 1+290.00

GL 1153.760 m

DL 1154.310m

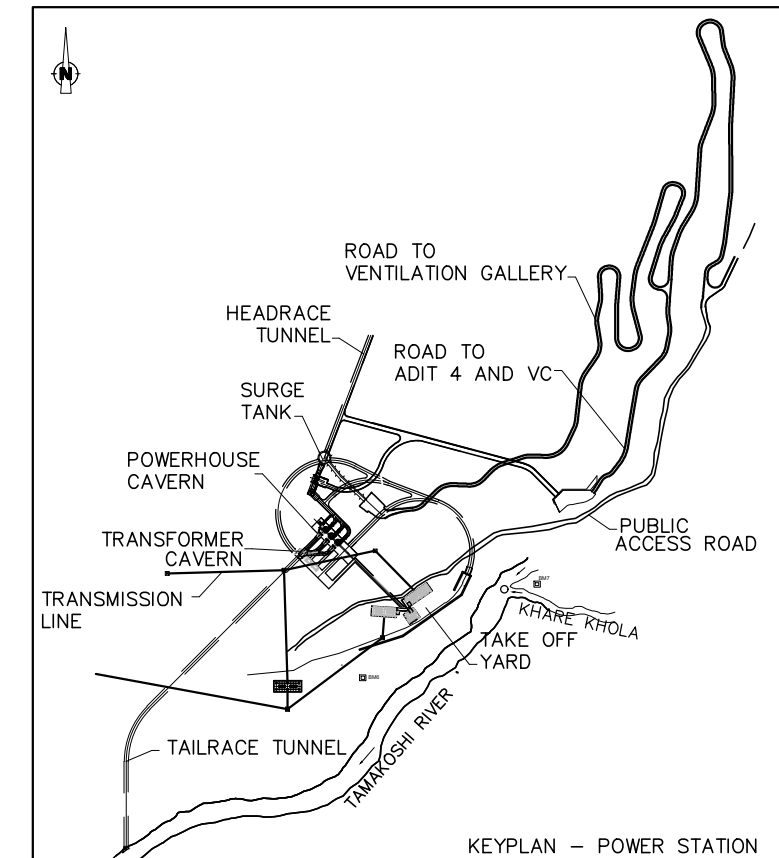
Soil - boulder mixed soil  
Cut - 3.758m<sup>2</sup>  
Fill - 1.975m<sup>2</sup>  
Shoulder Fill - 0.563m<sup>2</sup>  
Str. Cut - 4.278m<sup>2</sup>  
Back Fill - 0.643m<sup>2</sup>  
Base - 0.101m<sup>2</sup>  
Sub Base - 0.605m<sup>2</sup>  
Sub Grade - 0.806m<sup>2</sup>

Datum 1150.000m

## NOTES:

1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).

SCALE  
-2 0 2 4 6 8 10 [m]  
1:200



## Reference Drawings

Drwg. No.	Title
31-00053-DD-4813-1800	PROJECT ROADS, GENERAL, LAYOUT

Revisions	Name	Date	Notes



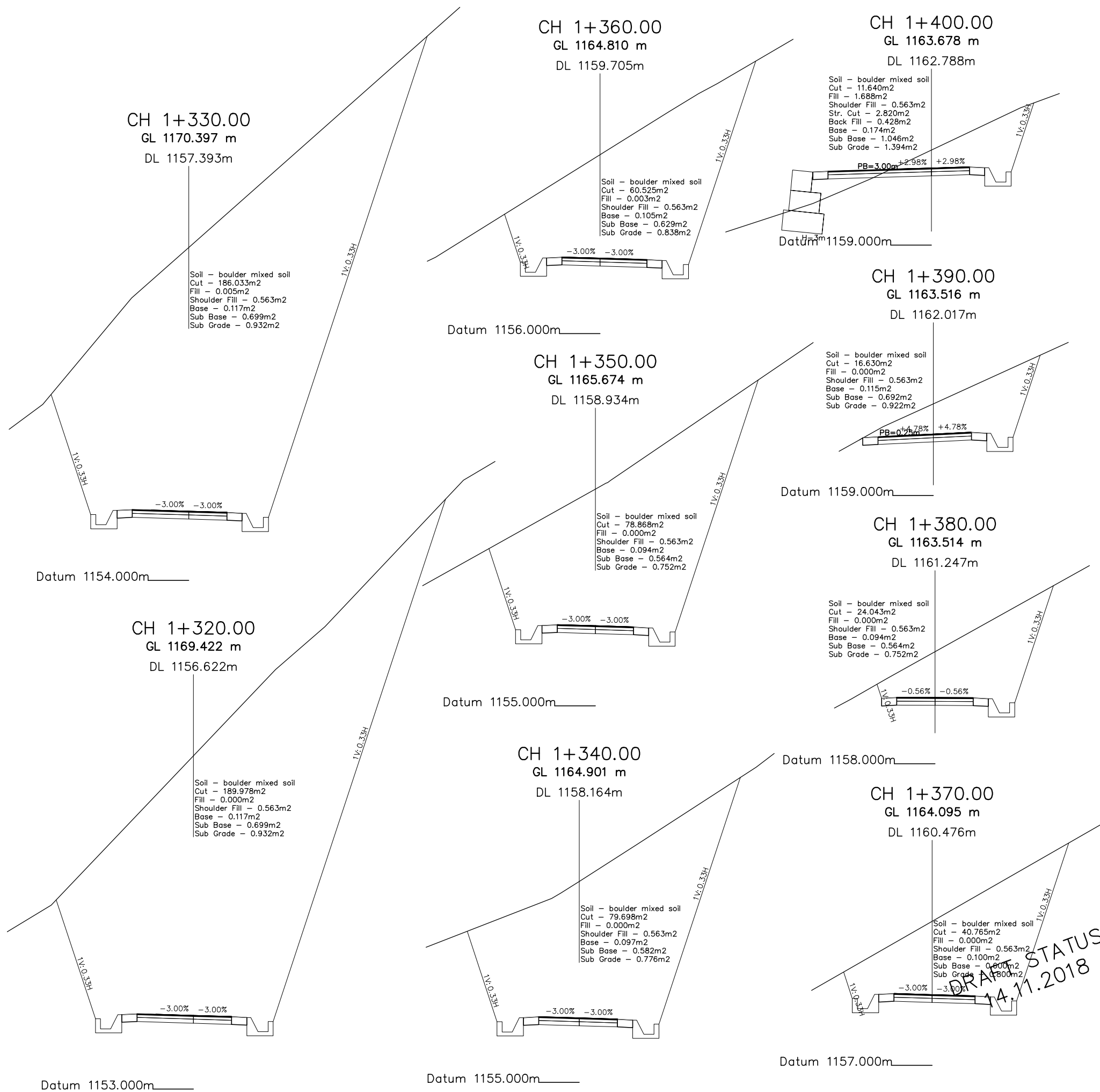
**TAMAKOSHI V HYDROELECTRIC PROJECT**  
PROJECT DEVELOPMENT DEPARTMENT  
ENGINEERING SERVICES DIRECTORATE  
NEPAL ELECTRICITY AUTHORITY



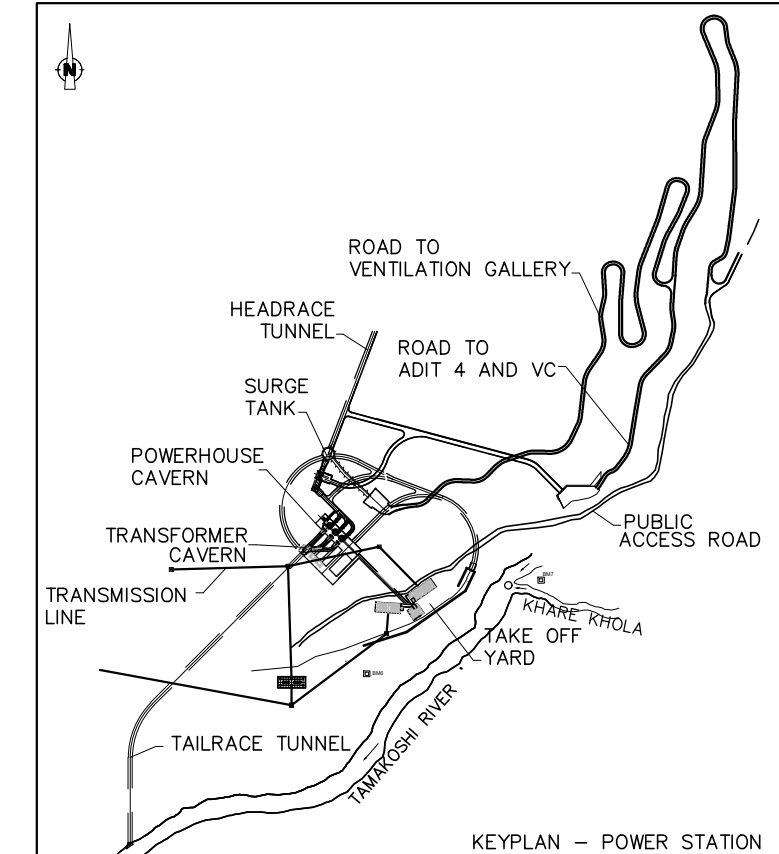
CONSULTING ENGINEERS  
BAD VILBEL, GERMANY

## TAMAKOSHI V HYDROELECTRIC PROJECT DETAILED ENGINEERING DESIGN


Name	Date	DETAILLED DESIGN
Prepared B. Khadka	23.10.17	PROJECT ROADS
Drawn B. Khadka		ROAD TO ADIT 4
Checked Roloff		CROSS SECTION
Approved Dr. Moeller		CH 1+220.00-1+310.00
Replaces Drwg. No:		SHEET 14 OF 20
...		PROJECT DRAWING
CAD- File No.:		
Scale A3: 1:200	Drwg. No.: 31-00053-DD-4813-Q 1809	REV. -




- NOTES:**
1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
  2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
  3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).

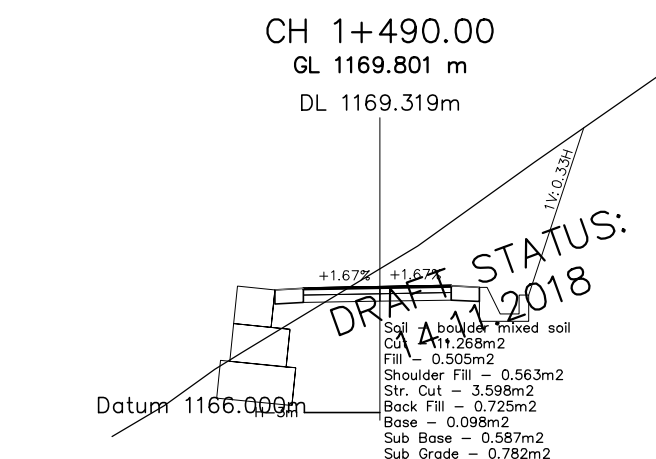
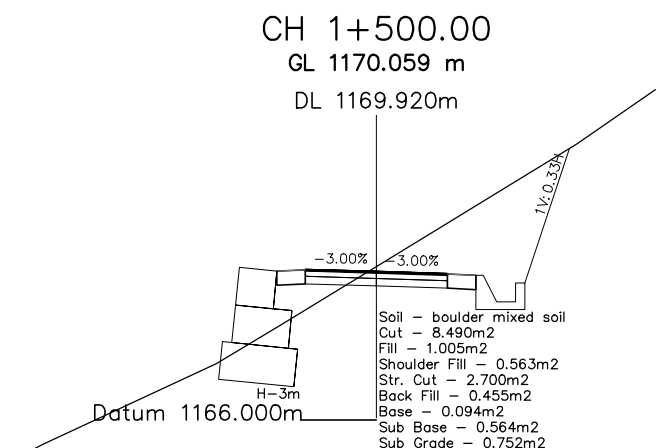
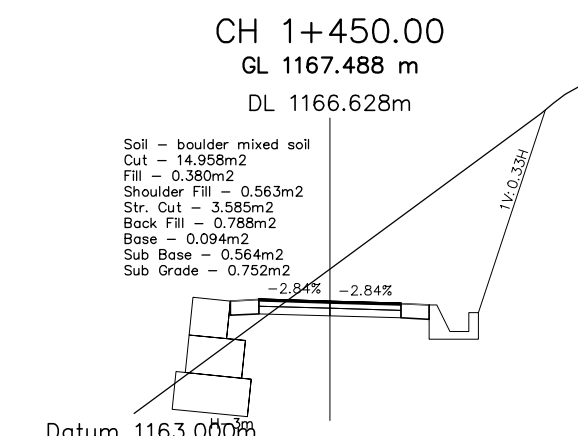
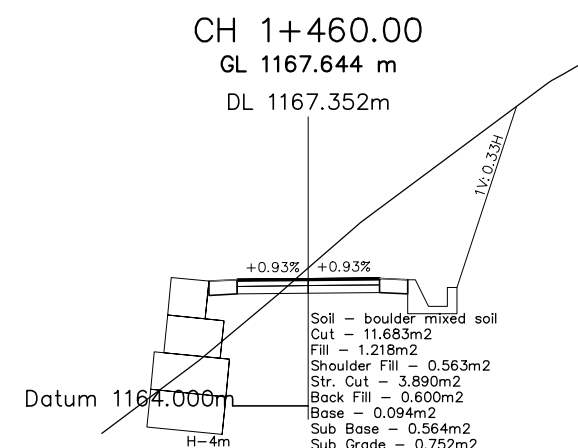
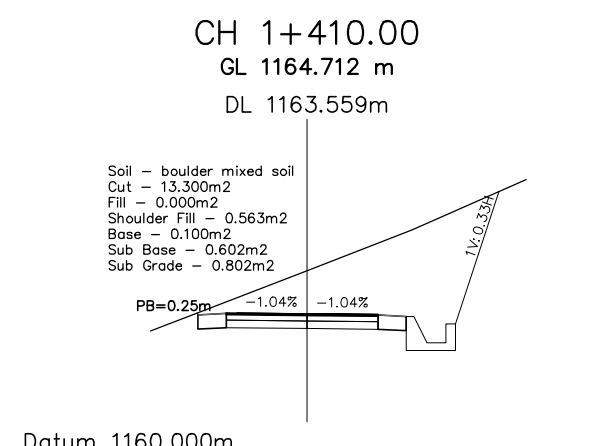


Reference Drawings			
Drwg. No.		Title	
31-00053-DD-4813-1800		PROJECT ROADS, GENERAL, LAYOUT	
Revisions			
	Name	Date	Notes

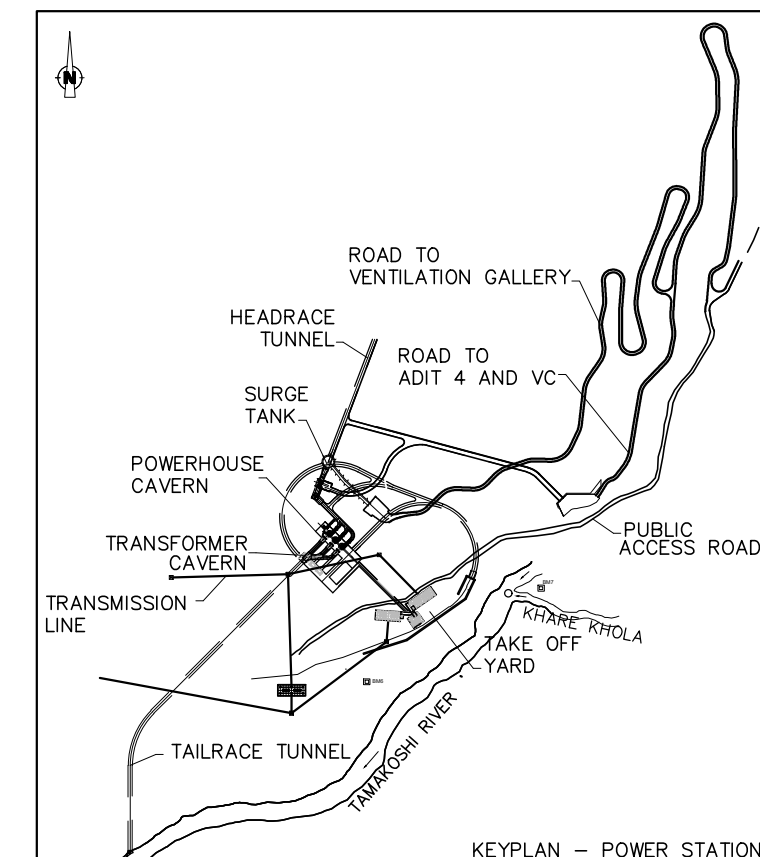
	TAMAKOSHI V HYDROELECTRIC PROJECT PROJECT DEVELOPMENT DEPARTMENT ENGINEERING SERVICES DIRECTORATE NEPAL ELECTRICITY AUTHORITY		
---	--	--	--

 LAHMEYER INTERNATIONAL	CONSULTING ENGINEERS BAD VILBEL, GERMANY
---	---

TAMAKOSHI V HYDROELECTRIC PROJECT DETAILED ENGINEERING DESIGN			
	Name	Date	DETAILED DESIGN
Prepared	B. Khadka	23.10.17	<u>PROJECT ROADS</u> <u>ROAD TO ADIT 4</u> <u>CROSS SECTION</u> CH 1+320.00-1+400.00 SHEET 15 OF 20 PROJECT DRAWING
Drawn	B. Khadka		
Checked	Roloff		
Approved	Dr. Moeller		
Replaces Drwg. No: ...			
CAD- File No.:			
Scale A3: 1:200			Drwg. No.: 31-00053-DD-4813- Q 1809
			REV. —



1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).



Reference Drawings	
Drwg. No.	Title
31-00053-DD-4813-1800	PROJECT ROADS, GENERAL, LAYOUT

Revisions			
	Name	Date	Notes



TAMAKOSHI V HYDROELECTRIC PROJECT  
PROJECT DEVELOPMENT DEPARTMENT  
ENGINEERING SERVICES DIRECTORATE  
NEPAL ELECTRICITY AUTHORITY



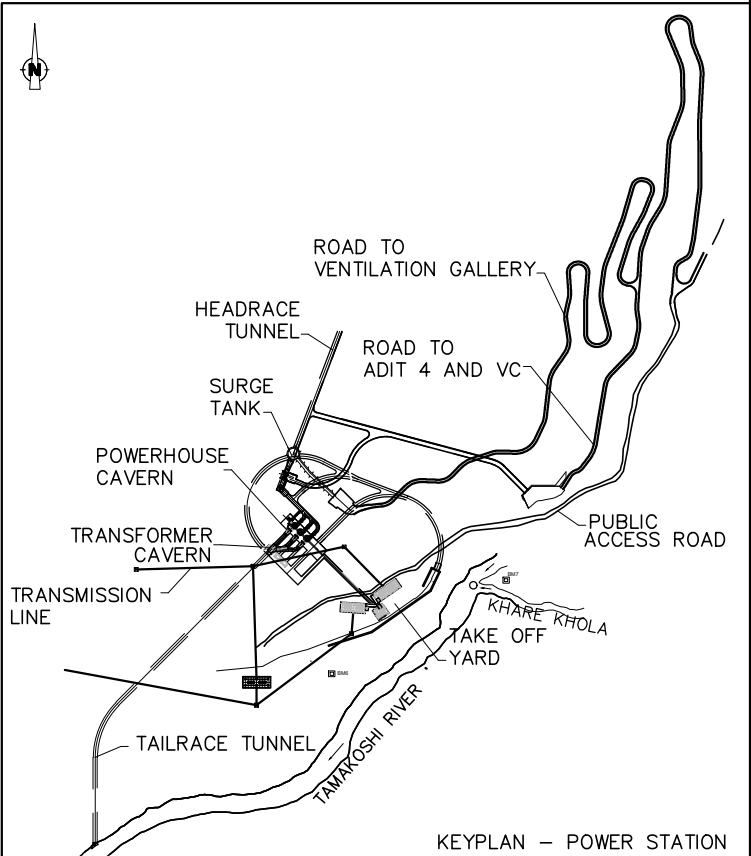
CONSULTING ENGINEERS  
BAD VILBEL, GERMANY

## TAMAKOSHI V HYDROELECTRIC PROJECT DETAILED ENGINEERING DESIGN

	Name	Date	DETAILED DESIGN	
Prepared	B. Khadka	23.10.17	<u>PROJECT ROADS</u> <u>ROAD TO ADIT 4</u> <u>CROSS SECTION</u> <u>CH 1+410.00–1+520.00</u> SHEET 16 OF 20 PROJECT DRAWING	
Drawn	B. Khadka			
Checked	Roloff			
Approved	Dr. Moeller			
Replaces Drwg. No: ...				
CAD– File No.:				
Scale A3: 1:200			Drwg. No.: 31–00053–DD–4813– <b>Q 1809</b> REV. 1	

NOTES:

1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).



Reference Drawings

Drwg. No.	Title
31-00053-DD-4813-1800	PROJECT ROADS, GENERAL, LAYOUT

Revisions

Name	Date	Notes
------	------	-------



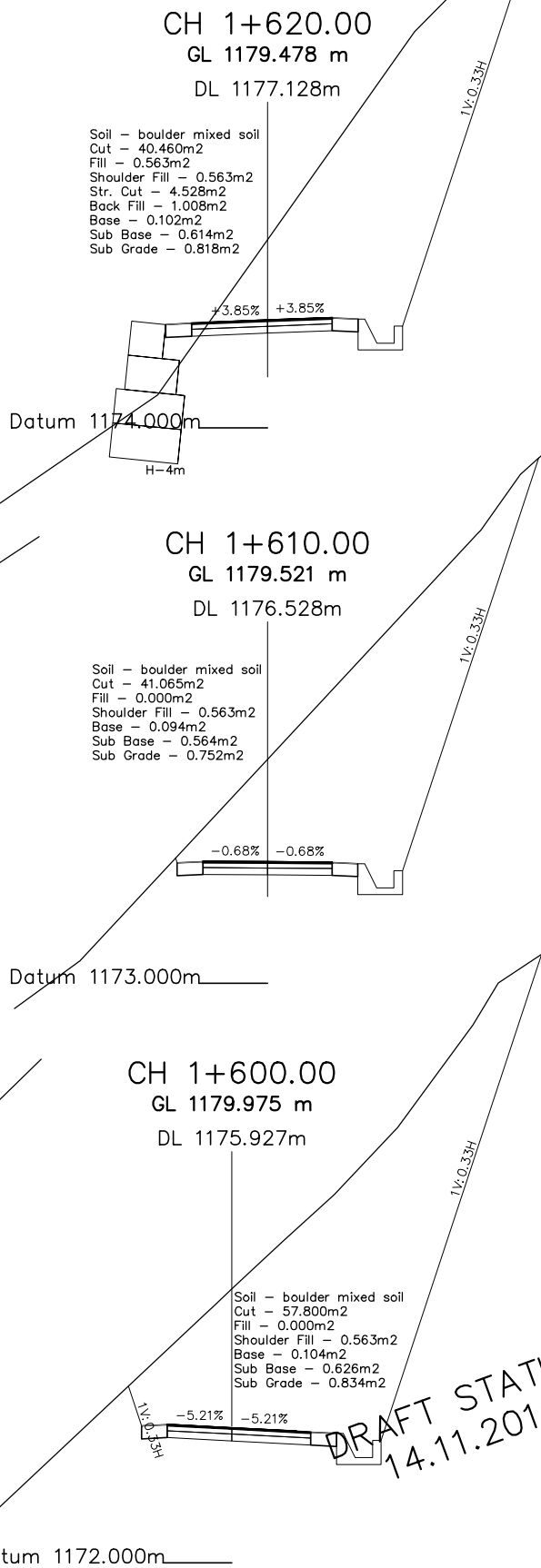
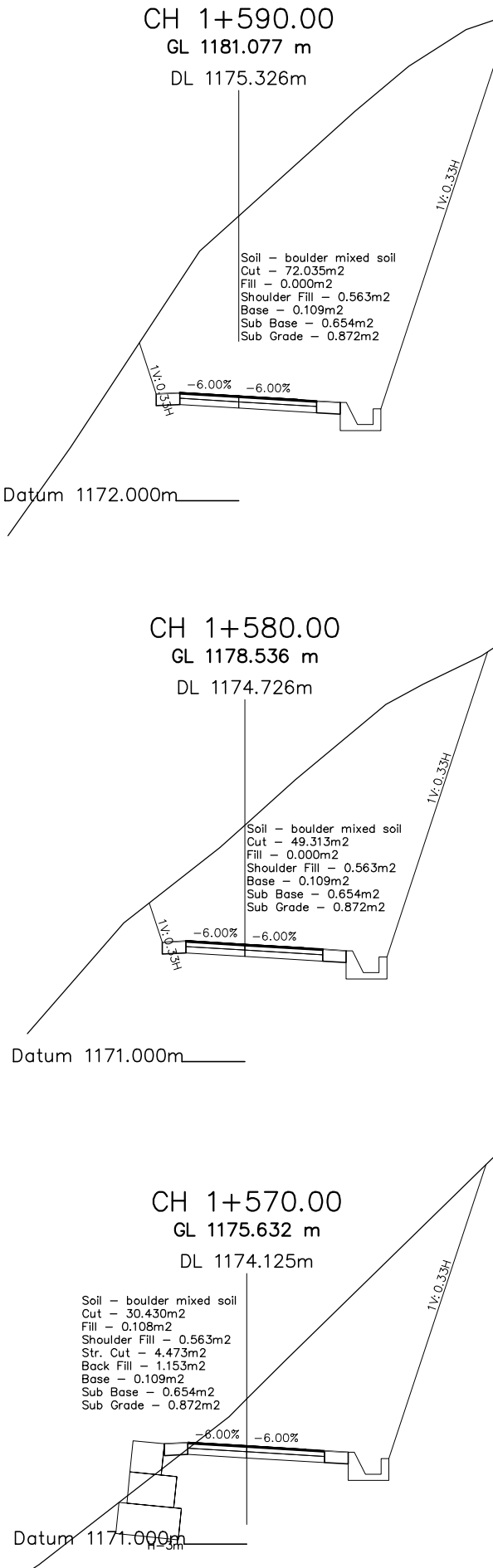
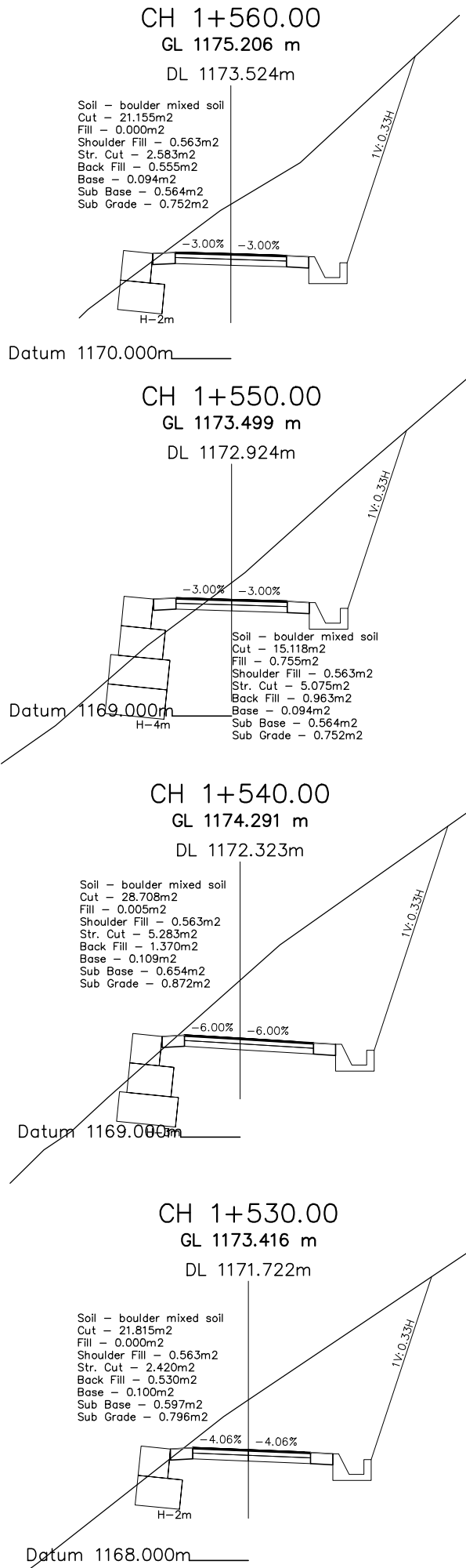
TAMAKOSHI V HYDROELECTRIC PROJECT  
PROJECT DEVELOPMENT DEPARTMENT  
ENGINEERING SERVICES DIRECTORATE  
NEPAL ELECTRICITY AUTHORITY



CONSULTING ENGINEERS  
BAD VILBEL, GERMANY

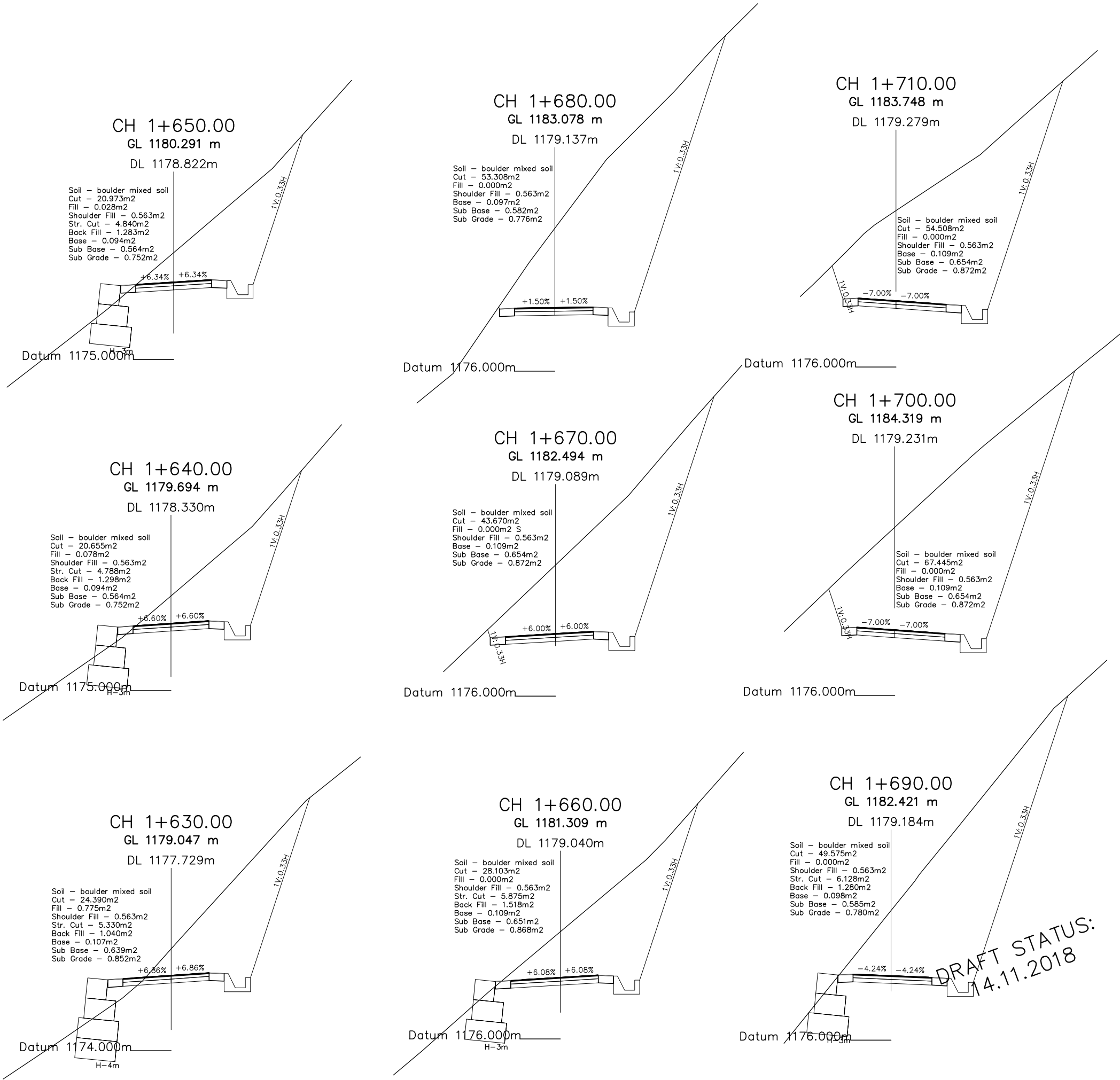
TAMAKOSHI V HYDROELECTRIC PROJECT  
DETAILED ENGINEERING DESIGN

Name	Date	DETAILLED DESIGN
Prepared B. Khadka	23.10.17	PROJECT ROADS
Drawn B. Khadka		ROAD TO ADIT 4
Checked Roloff		CROSS SECTION
Approved Dr. Moeller		CH 1+530.00-1+620.00
Replaces Drwg. No:		SHEET 17 OF 20
CAD- File No.:		PROJECT DRAWING
Scale A3: 1:200		Drwg. No.: 31-00053-DD-4813- Q 1809 REV. -

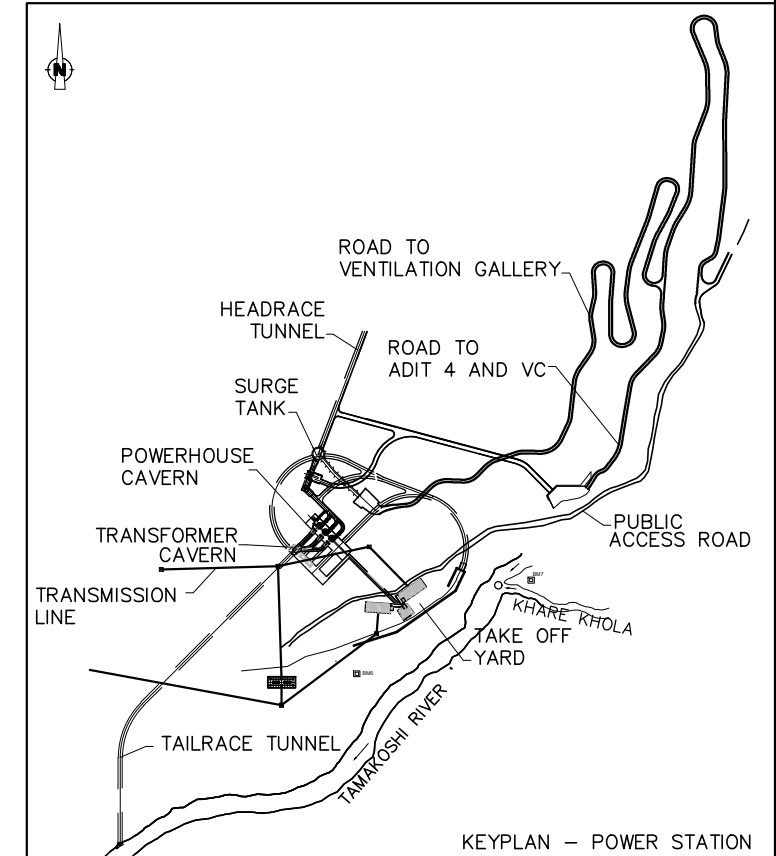


DRAFT STATUS:  
14.11.2018







- NOTES:**
1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
  2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
  3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).



Reference Drawings				
Drwg. No.			Title	
31-00053-DD-4813-1800			PROJECT ROADS, GENERAL, LAYOUT	
Revisions				
	Name	Date	Notes	



TAMAKOSHI V HYDROELECTRIC PROJECT  
PROJECT DEVELOPMENT DEPARTMENT  
ENGINEERING SERVICES DIRECTORATE  
NEPAL ELECTRICITY AUTHORITY



LAHMEYER  
INTERNATIONAL

CONSULTING ENGINEERS  
BAD VILBEL, GERMANY

**TAMAKOSHI V HYDROELECTRIC PROJECT**  
**DETAILED ENGINEERING DESIGN**

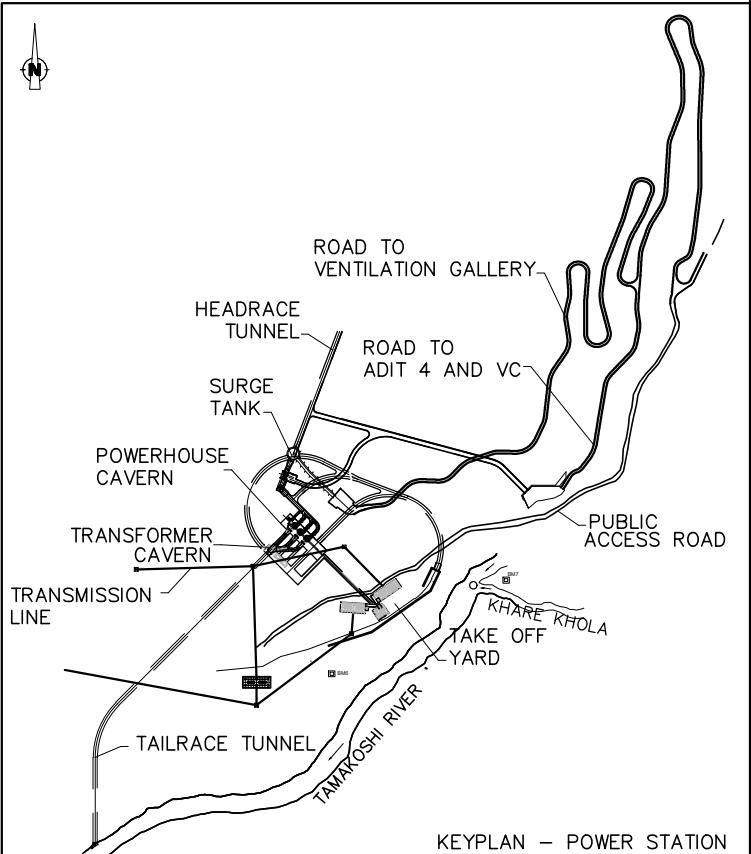
	Name	Date	DETAILED DESIGN <b>PROJECT ROADS</b> <b>ROAD TO ADIT 4</b> <b>CROSS SECTION</b> <b>CH 1+630.00-1+710.00</b> SHEET 18 OF 20 PROJECT DRAWING
Prepared	B. Khadka	23.10.17	
Drawn	B. Khadka		
Checked	Roloff		
Approved	Dr. Moeller		
Replaces Drwg. No:			
CAD- File No.:			
Scale A3:	1:200		

Drwg. No.: 31-00053-DD-4813- Q 1809 REV. —

DRAFT STATUS:  
14.11.2018

NOTES:

1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).



Reference Drawings

Drwg. No.	Title
31-00053-DD-4813-1800	PROJECT ROADS, GENERAL, LAYOUT

Revisions

No.	Name	Date	Notes



TAMAKOSHI V HYDROELECTRIC PROJECT  
PROJECT DEVELOPMENT DEPARTMENT  
ENGINEERING SERVICES DIRECTORATE  
NEPAL ELECTRICITY AUTHORITY



CONSULTING ENGINEERS  
BAD VILBEL, GERMANY

TAMAKOSHI V HYDROELECTRIC PROJECT  
DETAILED ENGINEERING DESIGN

Name	Date	DETAILLED DESIGN
Prepared B. Khadka	23.10.17	PROJECT ROADS
Drawn B. Khadka		ROAD TO ADIT 4
Checked Roloff		CROSS SECTION
Approved Dr. Moeller		CH 1+720.00-1+800.00
Replaces Drwg. No:		SHEET 19 OF 20
...		PROJECT DRAWING
CAD- File No.:		
Scale A3: 1:200	Drwg. No.: 31-00053-DD-4813- Q 1809	REV. -

CH 1+740.00  
GL 1182.383 m  
DL 1179.421m

Soil - boulder mixed soil  
Cut - 35.505m2  
Fill - 0.000m2  
Shoulder Fill - 0.563m2  
Base - 0.115m2  
Sub Base - 0.692m2  
Sub Grade - 0.922m2

+6.00% +6.00%

Datum 1176.000m

CH 1+770.00  
GL 1182.806 m  
DL 1179.563m

Soil - boulder mixed soil  
Cut - 33.813m2  
Fill - 0.000m2  
Shoulder Fill - 0.563m2  
Base - 0.094m2  
Sub Base - 0.564m2  
Sub Grade - 0.752m2

-3.00% -3.00%

Datum 1176.000m

CH 1+800.00  
GL 1182.475 m  
DL 1179.705m

Soil - boulder mixed soil  
Cut - 34.540m2  
Fill - 0.000m2  
Shoulder Fill - 0.563m2  
Base - 0.105m2  
Sub Base - 0.630m2  
Sub Grade - 0.840m2

-3.00% -3.00%

Datum 1176.000m

CH 1+730.00  
GL 1182.548 m  
DL 1179.374m

Soil - boulder mixed soil  
Cut - 36.330m2  
Fill - 0.000m2  
Shoulder Fill - 0.563m2  
Base - 0.095m2  
Sub Base - 0.567m2  
Sub Grade - 0.756m2

+1.67% +1.67%

Datum 1176.000m

CH 1+760.00  
GL 1182.593 m  
DL 1179.516m

Soil - boulder mixed soil  
Cut - 33.203m2  
Fill - 0.003m2  
Shoulder Fill - 0.563m2  
Base - 0.105m2  
Sub Base - 0.630m2  
Sub Grade - 0.840m2

+1.88%

Datum 1176.000m

CH 1+790.00  
GL 1183.491 m  
DL 1179.658m

Soil - boulder mixed soil  
Cut - 43.605m2  
Fill - 0.000m2  
Shoulder Fill - 0.563m2  
Base - 0.109m2  
Sub Base - 0.654m2  
Sub Grade - 0.872m2

-3.00% -3.00%

Datum 1176.000m

CH 1+720.00  
GL 1183.030 m  
DL 1179.326m

Soil - boulder mixed soil  
Cut - 41.833m2  
Fill - 0.000m2  
Shoulder Fill - 0.563m2  
Base - 0.094m2  
Sub Base - 0.564m2  
Sub Grade - 0.752m2

-2.90% -2.90%

Datum 1176.000m

CH 1+750.00  
GL 1181.982 m  
DL 1179.468m

Soil - boulder mixed soil  
Cut - 27.428m2  
Fill - 0.510m2  
Shoulder Fill - 0.563m2  
Str. Cut - 3.583m2  
Back Fill - 0.730m2  
Base - 0.184m2  
Sub Base - 1.104m2  
Sub Grade - 1.472m2

+6.00% +6.00%

Datum 1176.000m

CH 1+780.00  
GL 1183.343 m  
DL 1179.610m

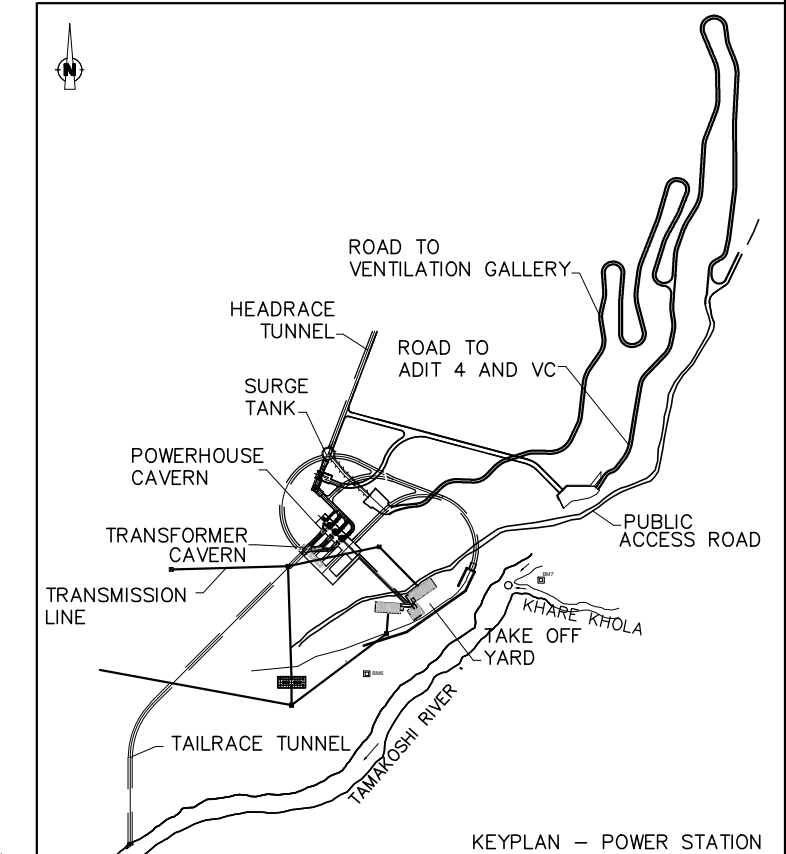
Soil - boulder mixed soil  
Cut - 41.738m2  
Fill - 0.000m2  
Shoulder Fill - 0.563m2  
Base - 0.104m2  
Sub Base - 0.621m2  
Sub Grade - 0.820m2

-3.00% -3.00%


Datum 1176.000m


DRAFT STATUS:  
14.11.2018

1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).

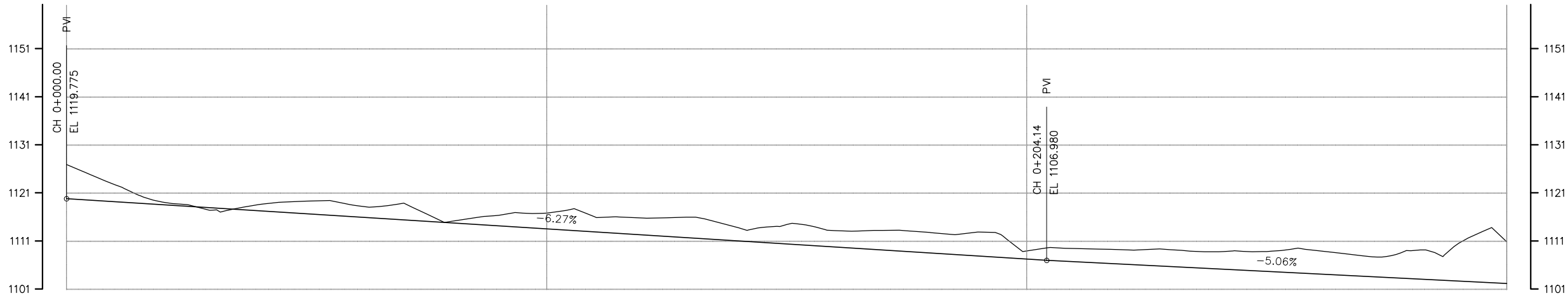


Reference Drawings				
Drwg. No.			Title	
31-00053-DD-4813-1800			PROJECT ROADS, GENERAL, LAYOUT	
Revisions				
	Name	Date	Notes	

	TAMAKOSHI V HYDROELECTRIC PROJECT PROJECT DEVELOPMENT DEPARTMENT ENGINEERING SERVICES DIRECTORATE NEPAL ELECTRICITY AUTHORITY		
---	--	--	--

	LAHMEYER INTERNATIONAL	CONSULTING ENGINEERS BAD VILBEL, GERMANY
---	---------------------------	---

TAMAKOSHI V HYDROELECTRIC PROJECT DETAILED ENGINEERING DESIGN			
	Name	Date	DETAILED DESIGN  <u>PROJECT ROADS</u>  <u>ROAD TO ADIT 4</u>  <u>CROSS SECTION</u> <u>CH 1+810.00-1+864.50</u> <u>SHEET 20 OF 20</u> <u>PROJECT DRAWING</u>
Prepared	B. Khadka	23.10.17	
Drawn	B. Khadka		
Checked	Roloff		
Approved	Dr. Moeller		
Replaces Drwg. No: ...			
CAD- File No.:			
Scale A3: 1:200			Drwg. No.: 31-00053-DD-4813- <b>Q 1809</b> REV. —



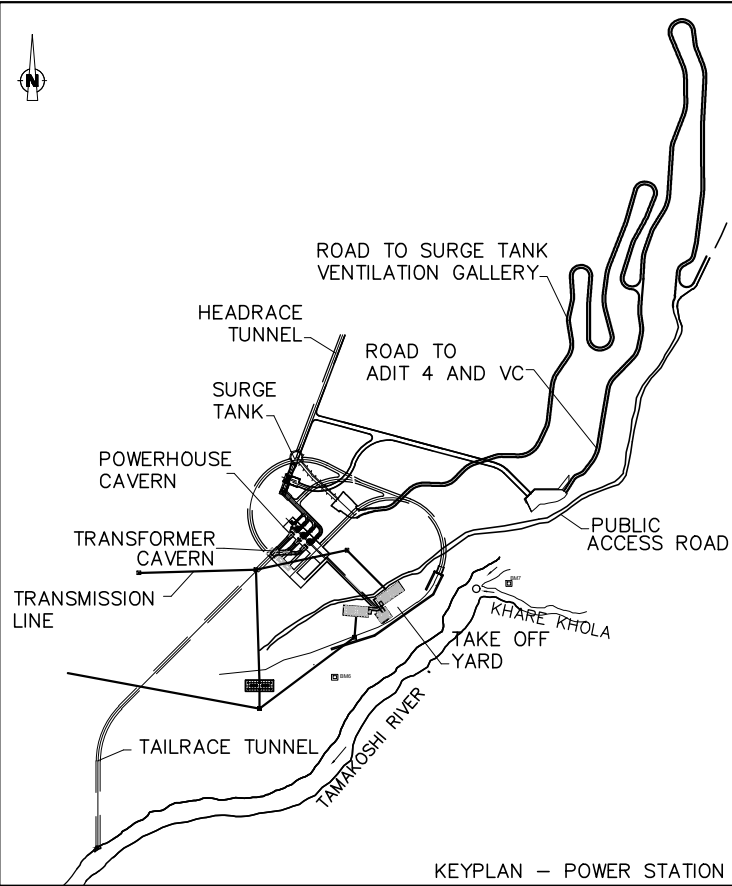
DESIGN LEVEL (m)	1119.775	1119.148	1118.521	1117.895	1117.268	1116.641	1116.014	1115.388	1114.761	1114.134	1113.507	1112.880	1112.254	1111.627	1111.000	1110.373	1109.747	1109.120	1108.493	1107.866	1107.239	1106.613	1105.986	1105.359	1104.732	1104.105	1103.478	1102.851	1102.224	1101.597			
EXISTING LEVEL (m)	1126.912	1122.731	1119.055	1117.378	1118.550	1119.269	1118.413	1118.824	1115.049	1116.334	1116.807	1116.013	1115.763	1115.937	1113.742	1111.000	1114.424	1113.161	1113.201	1112.746	1112.847	1108.932	1109.416	1109.683	1109.168	1109.186	1108.751	1108.808	1109.045	1107.911	1108.971	1110.505	1110.819
CHAINAGE (km)	0+000.00	0+010.00	0+020.00	0+030.00	0+040.00	0+050.00	0+060.00	0+070.00	0+080.00	0+090.00	0+100.00	0+110.00	0+120.00	0+130.00	0+140.00	0+150.00	0+160.00	0+170.00	0+180.00	0+190.00	0+200.00	0+210.00	0+220.00	0+230.00	0+240.00	0+250.00	0+260.00	0+270.00	0+280.00	0+290.00	0+300.00		

IP.No	CO-ORDINATES(m)		WCB (D-M-S)	DIST (m)	DEF. ANG (D-M-S)	TAN. LEN. (m)	SIMPLE CURVE DATA			CHAINAGE			
	EASTING	NORTHING					R (m)	E (m)	LC (m)	BC	MC	EC	IP
16	421139.322	3071837.526	93-52-30	0.000	00-00-00	0.000	50.000	0.000	0.000	0+000.00	0+000.00	0+000.00	0+000.00
16-1	421154.469	3071836.500	184-38-52	15.182	90-46-25	12.670	12.500	5.298	19.804	0+002.51	0+012.41	0+022.31	0+015.18
17	421151.969	3071805.750	171-33-28	30.851	13-05-31	7.459	65.000	0.427	14.853	0+033.03	0+040.46	0+047.88	0+040.49
17-1	421155.531	3071781.750	191-27-13	24.263	19-53-35	7.015	40.000	0.610	13.888	0+057.67	0+064.62	0+071.56	0+064.68
18	421149.250	3071750.750	224-04-42	31.630	32-37-27	8.779	30.000	1.258	17.082	0+087.40	0+095.94	0+104.48	0+096.18
19	421111.969	3071712.250	189-44-20	53.592	34-20-14	9.269	30.000	1.399	17.979	0+140.02	0+149.01	0+158.00	0+149.29
20	421104.031	3071666.000	189-16-31	46.926	00-27-50	0.405	100.000	0.001	0.810	0+195.25	0+195.66	0+196.06	0+195.66
21	421095.906	3071616.250	217-22-47	50.409	28-06-12	12.514	50.000	1.542	24.525	0+233.55	0+245.82	0+258.08	0+246.06
22	421077.188	3071591.750	251-33-54	30.832	34-10-57	4.612	15.000	0.693	8.949	0+271.79	0+276.27	0+280.74	0+276.40
23	421066.688	3071588.250	212-03-21	11.068	39-30-40	5.387	15.000	0.938	10.344	0+281.81	0+286.98	0+292.15	0+287.20



- NOTES:
- ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
  - ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
  - CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).

DRAFT STATUS:  
14.11.2018





Reference Drawings

Drwg. No.	Title
31-00053-DD-4813-1800	PROJECT ROADS, GENERAL, LAYOUT

Revisions

No.	Name	Date	Notes

TAMAKOSHI V HYDROELECTRIC PROJECT  
PROJECT DEVELOPMENT DEPARTMENT  
ENGINEERING SERVICES DIRECTORATE  
NEPAL ELECTRICITY AUTHORITY

LAHMEYER  
INTERNATIONAL

CONSULTING ENGINEERS  
BAD VILBEL, GERMANY

	Name	Date
Prepared	B. Khadka	23.10.17
Drawn	B. Khadka	
Checked	Roloff	
Approved	Dr. Moeller	
Replaces Drwg. No:		
...		
CAD- File No.:		

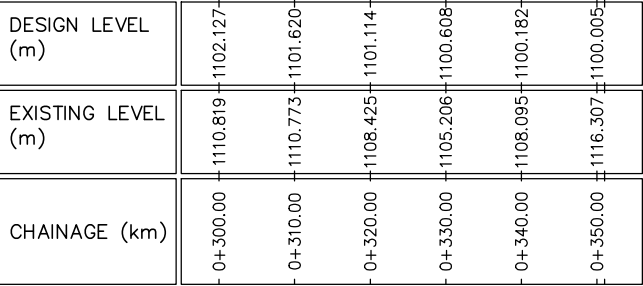
DETAILED DESIGN  
**PROJECT ROADS**  
**ROAD TO SURGE TANK**  
**VENTILATION ADIT**  
**LONGITUDINAL PROFILE**  
SHEET 1 OF 2  
PROJECT DRAWING

Scale A3: 1:1000

Drwg. No.: 31-00053-DD-4813- Q 1811

REV. —



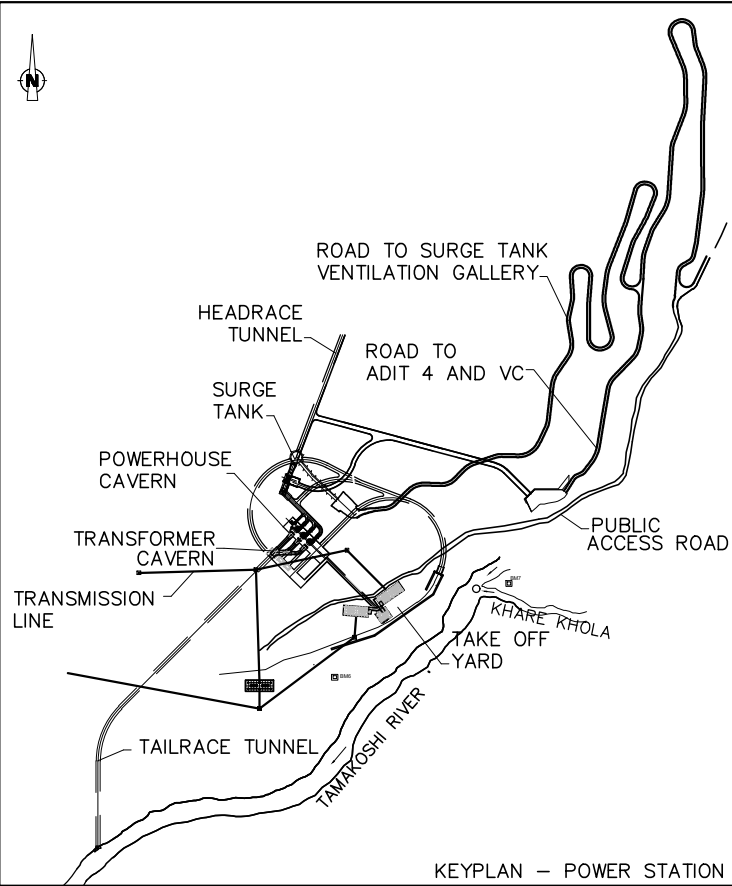


IP.No	CO—ORDINATES(m)		WCB (D—M—S)	DIST (m)	DEF. ANG (D—M—S)	TAN. LEN. (m)	SIMPLE CURVE DATA			CHAINAGE			
	EASTING	NORTHING					R (m)	E (m)	LC (m)	BC	MC	EC	IP
24	421050.406	3071562.250	251—50—10	30.677	39—46—49	10.854	30.000	1.903	20.829	0+306.59	0+317.01	0+327.42	0+317.44
25	421030.594	3071555.750	305—03—53	20.851	53—13—40	7.516	15.000	1.778	13.935	0+329.90	0+336.87	0+343.84	0+337.42
26	421018.719	3071564.085	00—00—00	14.508	00—00—00	0.000	0.000	0.000	0.000	0+350.83	0+350.83	0+350.83	0+350.83




1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).


DRAFT STATUS:  
14.11.2018



Reference Drawings			
Drwg. No.	Title		
31-00053-DD-4813-1800	PROJECT ROADS, GENERAL, LAYOUT		
Revisions			
	Name	Date	Notes



**TAMAKOSHI V HYDROELECTRIC PROJECT**  
**PROJECT DEVELOPMENT DEPARTMENT**  
**ENGINEERING SERVICES DIRECTORATE**  
**NEPAL ELECTRICITY AUTHORITY**



**LAHMEYER  
INTERNATIONAL**

**CONSULTING ENGINEERS**  
**BAD VILBEL, GERMANY**

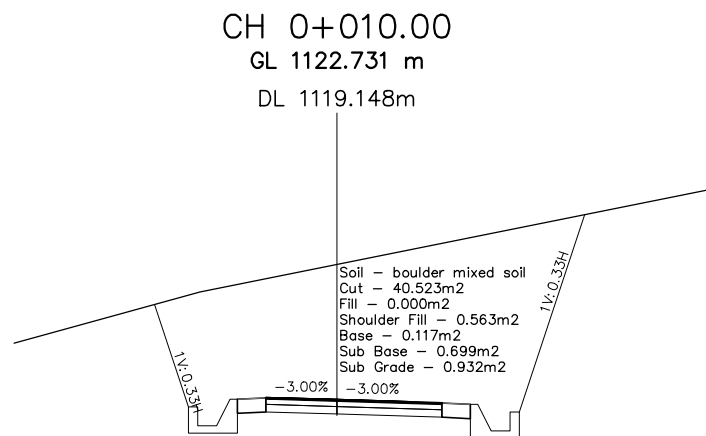
## TAMAKOSHI V HYDROELECTRIC PROJECT

### DETAILED ENGINEERING DESIGN

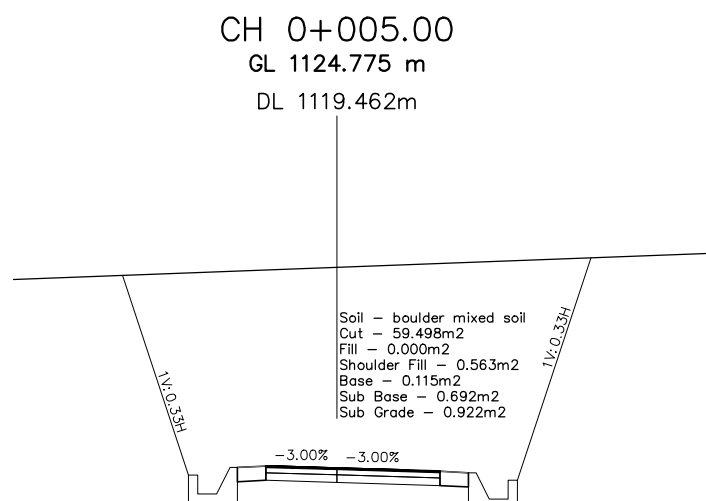
	Name	Date	DETAILED DESIGN  <h2 style="margin: 0;">PROJECT ROADS</h2> <h3 style="margin: 0;">ROAD TO SURGE TANK</h3> <h3 style="margin: 0;">VENTILATION ADIT</h3> <h3 style="margin: 0;">LONGITUDINAL PROFILE</h3> SHEET 2 OF 2  PROJECT DRAWING
Prepared	B. Khadka	23.10.17	
Drawn	B. Khadka		
Checked	Roloff		
Approved	Dr. Moeller		
Replaces Drwg. No:			
...			
CAD- File No.:			
Scale A3: 1:1000			Drwg. No.: 31-00053-DD-4813- Q 1811

REV.

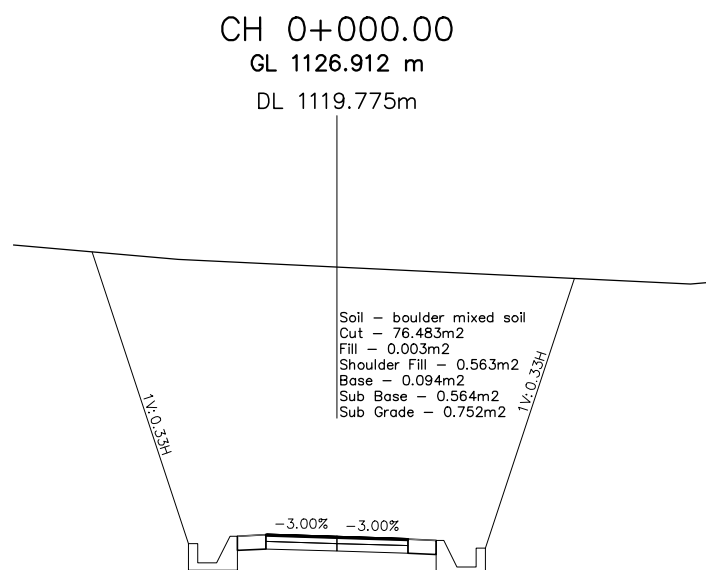
—



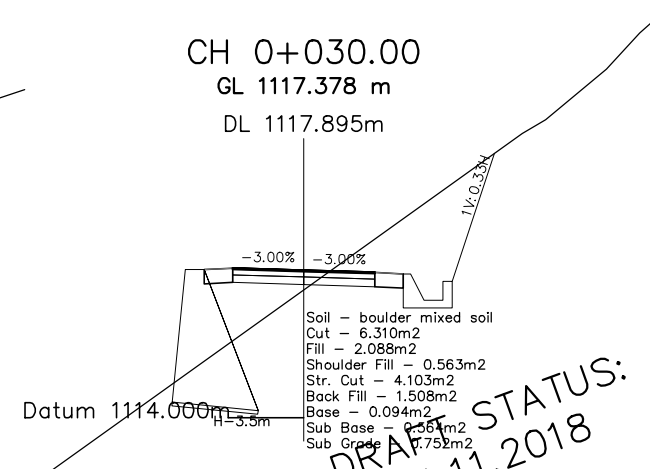
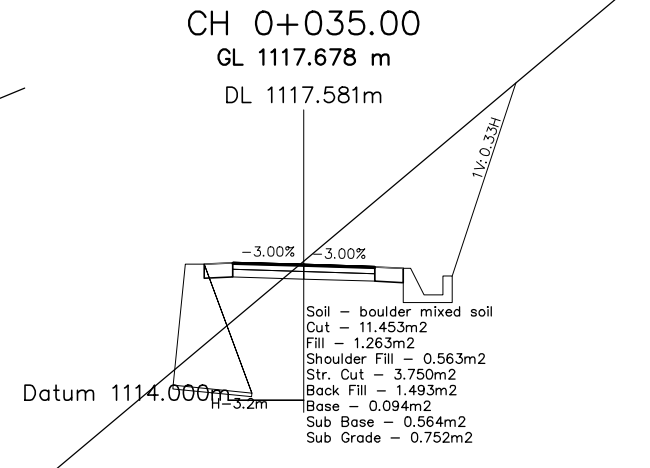
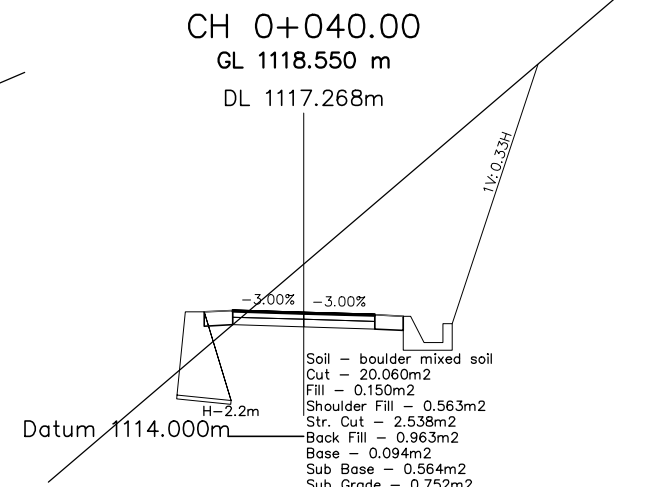
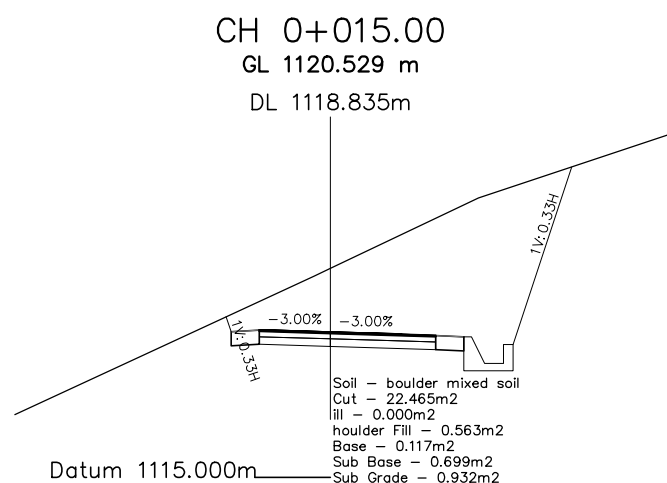
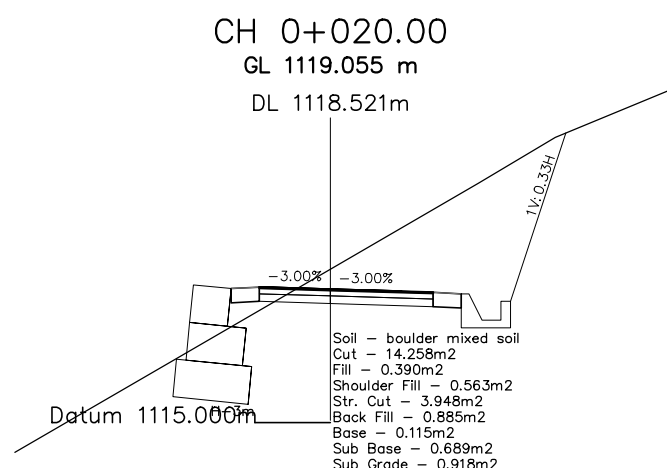
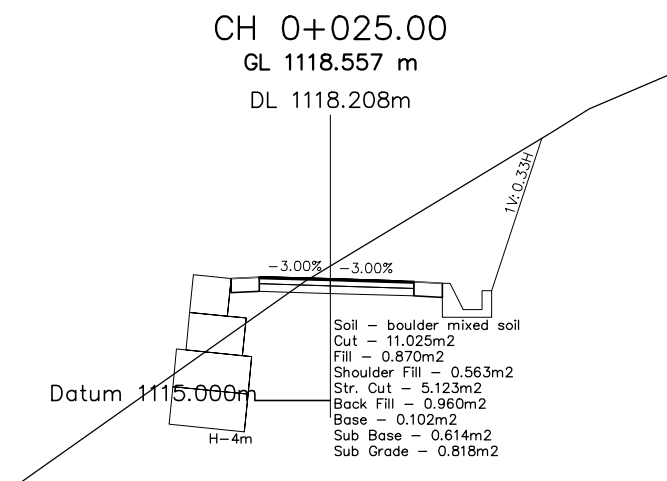
Datum 1116.000m



Datum 1116.000m



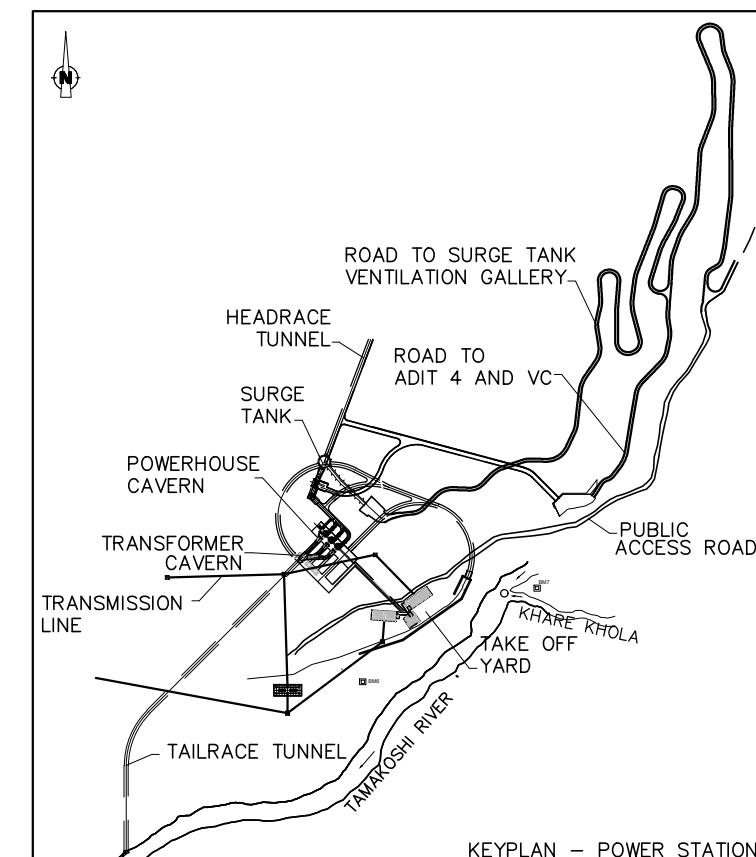
Datum 1116.000m



DRAG STATUS:  
14.11.2018

## NOTES:

1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).



KEYPLAN - POWER STATION

Reference Drawings	
Drwg. No.	Title
31-00053-DD-4813-1800	PROJECT ROADS, GENERAL, LAYOUT

Revisions		Name	Date	Notes



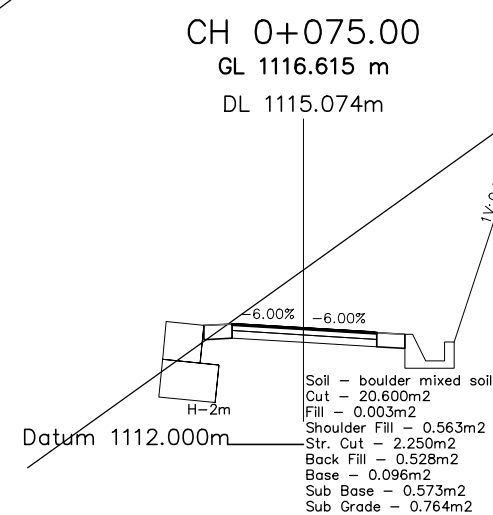
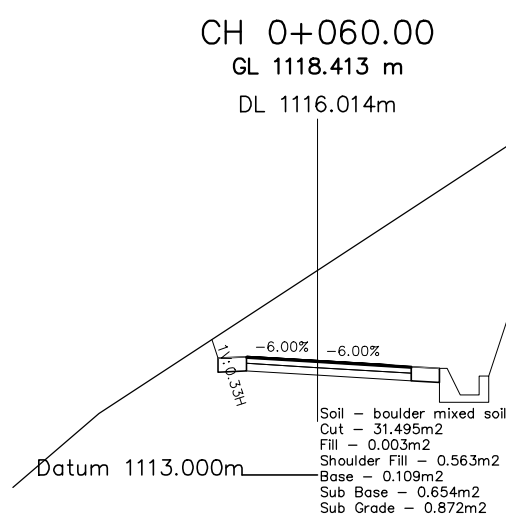
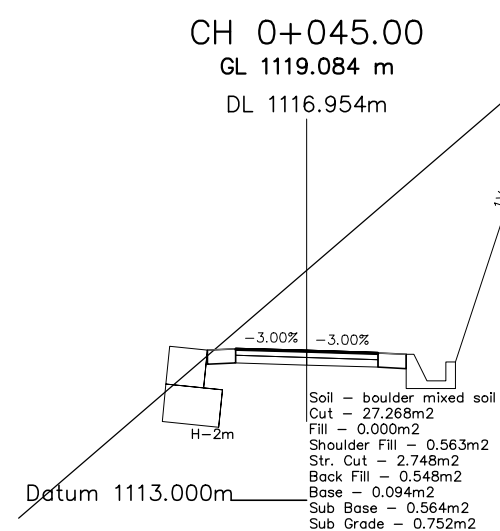
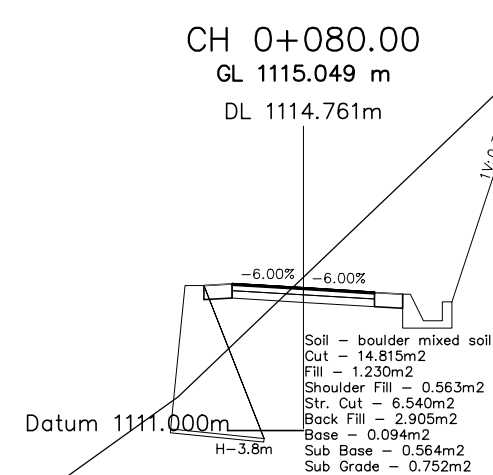
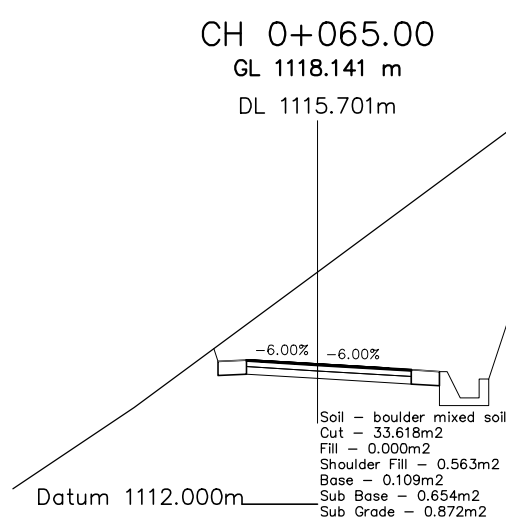
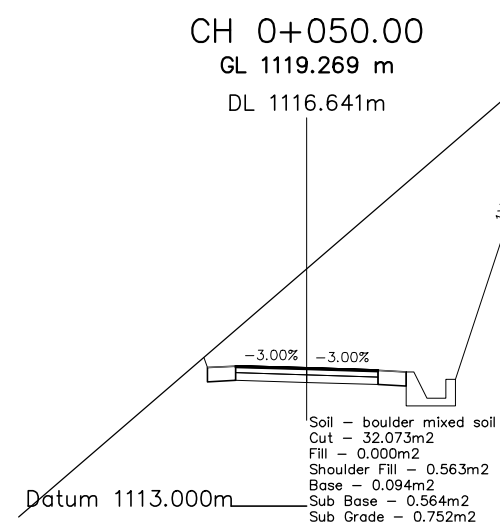
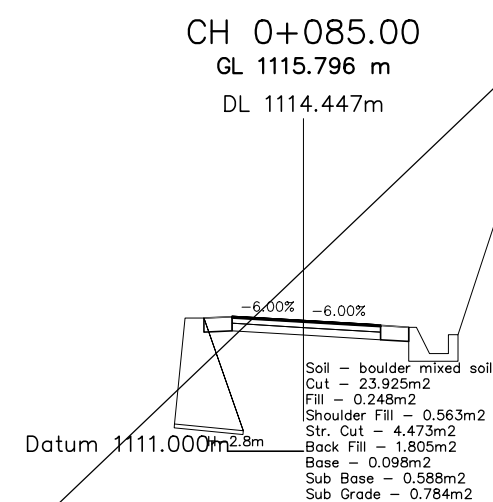
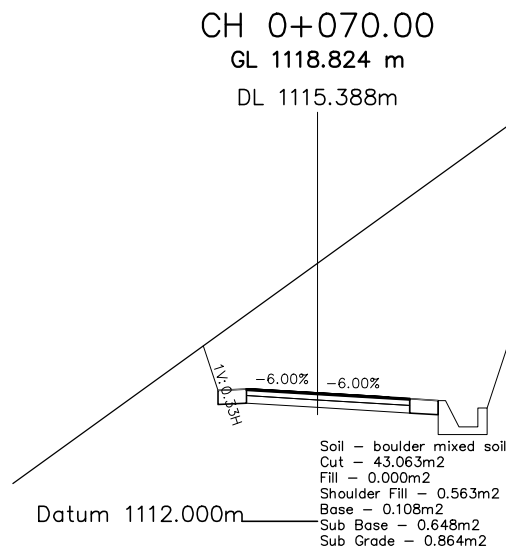
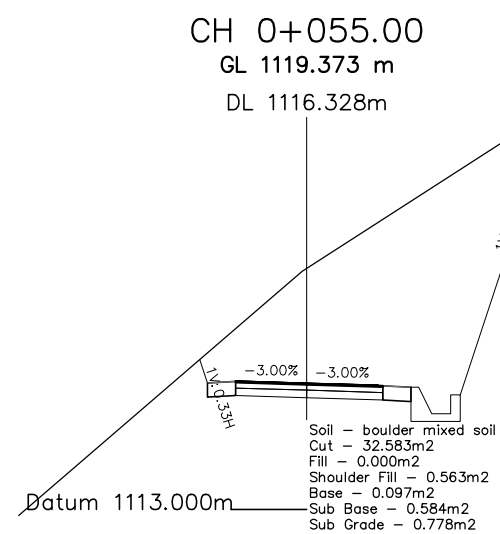
TAMAKOSHI V HYDROELECTRIC PROJECT  
PROJECT DEVELOPMENT DEPARTMENT  
ENGINEERING SERVICES DIRECTORATE  
NEPAL ELECTRICITY AUTHORITY



CONSULTING ENGINEERS  
BAD VILBEL, GERMANY

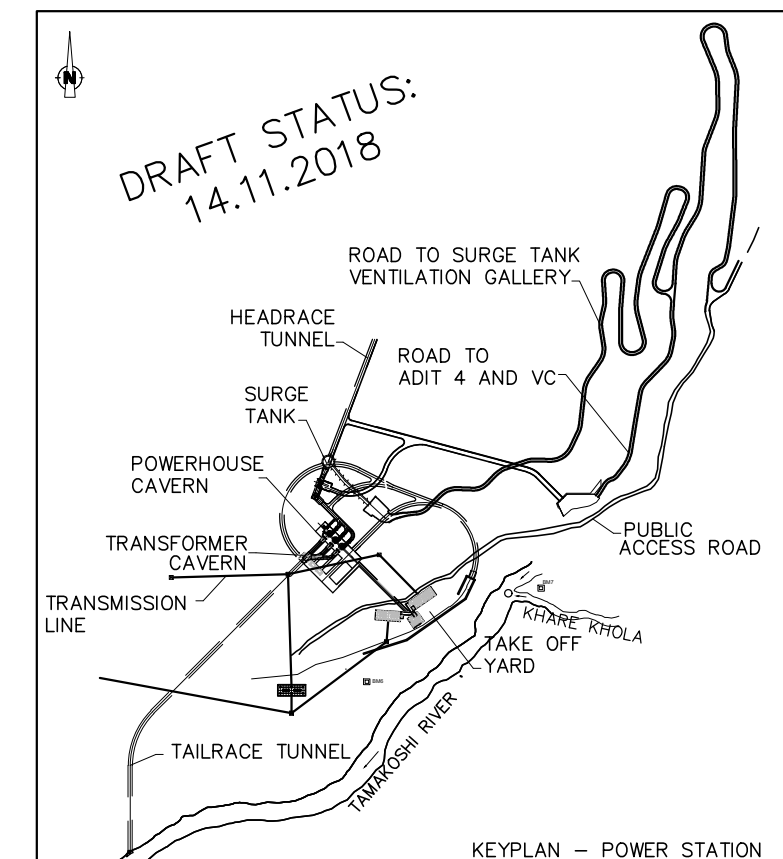
## TAMAKOSHI V HYDROELECTRIC PROJECT DETAILED ENGINEERING DESIGN

Name			Date	DETAILED DESIGN  PROJECT ROADS ROAD TO VENTILATION ADIT CROSS SECTION CH 0+000.00-0+040.00 SHEET 1 OF 10 PROJECT DRAWING
Prepared	B. Khadka		23.10.17	
Drawn	B. Khadka			
Checked	Roloff			
Approved	Dr. Moeller			
Replaces Drwg. No:				
CAD- File No.:				
Scale A3: 1:200				Drwg. No.: 31-00053-DD-4813- Q 1812 REV. -



NOTES:

1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).

[illegible]

TAMAKOSHI V HYDROELECTRIC PROJECT  
PROJECT DEVELOPMENT DEPARTMENT  
ENGINEERING SERVICES DIRECTORATE  
NEPAL ELECTRICITY AUTHORITY



CONSULTING ENGINEERS  
BAD VILBEL, GERMANY

## TAMAKOSHI V HYDROELECTRIC PROJECT

### DETAILED ENGINEERING DESIGN

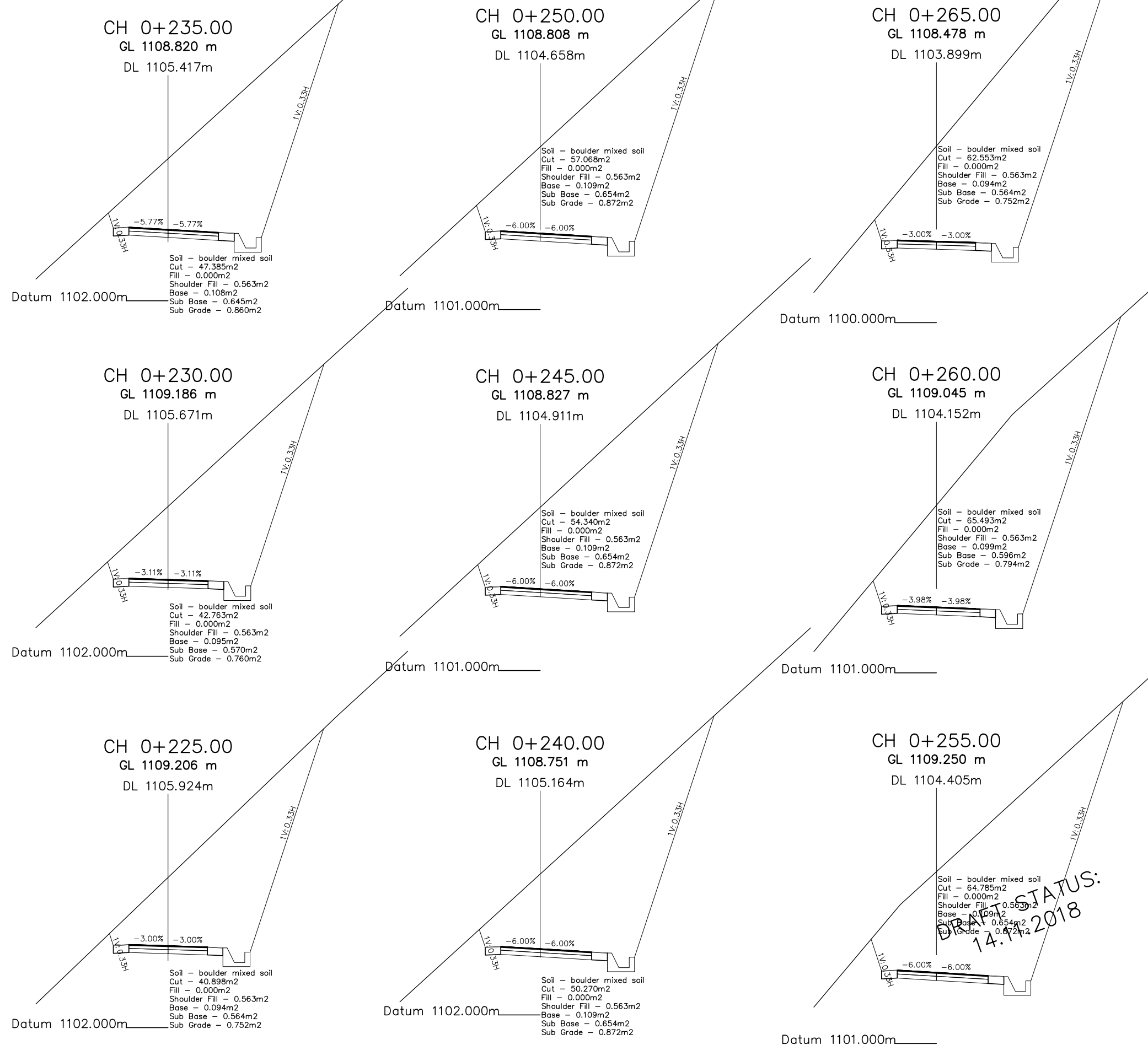
	Name	Date	DETAILED DESIGN		
Prepared	B. Khadka	23.10.17	<u>PROJECT ROADS</u> <u>ROAD TO VENTILATION ADIT</u> <u>CROSS SECTION</u> <u>CH 0+045.00–0+085.00</u> SHEET 2 OF 10 PROJECT DRAWING		
Drawn	B. Khadka				
Checked	Roloff				
Approved	Dr. Moeller				
Replaces Drwg. No: ...					
CAD– File No.:					
Scale A3:	1: 200		Drwg. No.: 31–00053–DD–4813–	Q 1812	REV.



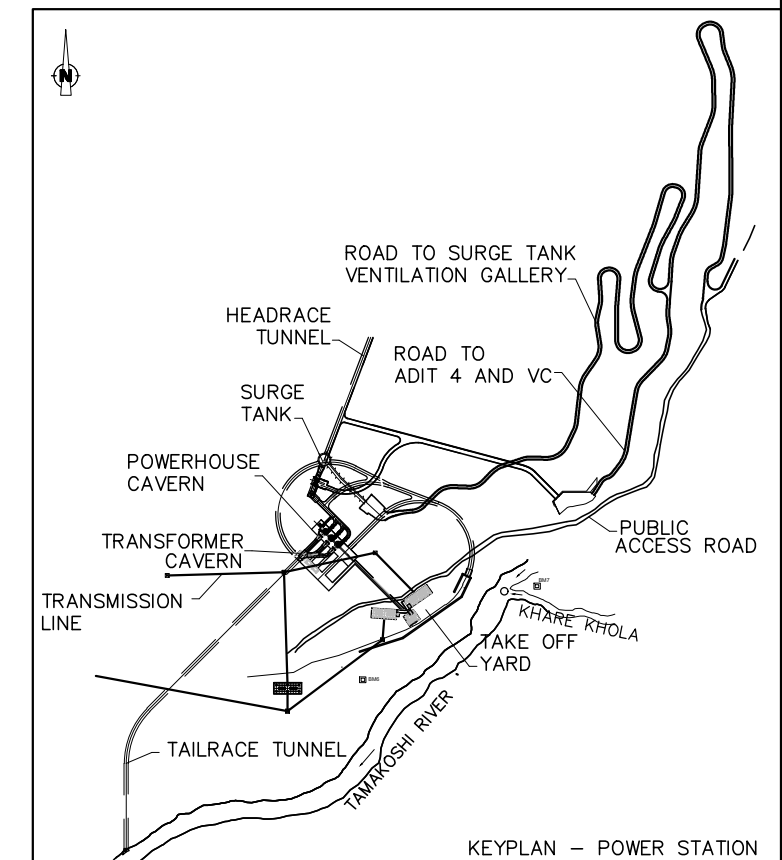










- NOTES:**
1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
  2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
  3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).



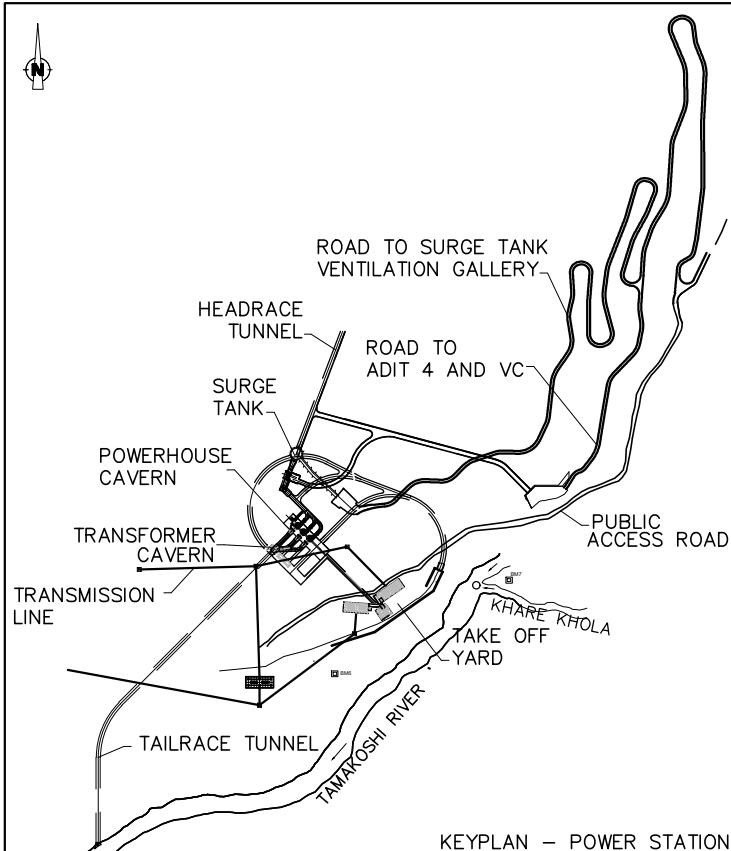
Reference Drawings				
Drwg. No.			Title	
31-00053-DD-4813-1800			PROJECT ROADS, GENERAL, LAYOUT	
Revisions				
	Name	Date	Notes	
<div><div></div><div>TAMAKOSHI V HYDROELECTRIC PROJECT PROJECT DEVELOPMENT DEPARTMENT ENGINEERING SERVICES DIRECTORATE NEPAL ELECTRICITY AUTHORITY</div></div>				
<div><div></div><div>LAHMEYER INTERNATIONAL</div></div>			<div>CONSULTING ENGINEERS BAD VILBEL, GERMANY</div>	
<div>TAMAKOSHI V HYDROELECTRIC PROJECT DETAILED ENGINEERING DESIGN</div>				
	Name	Date	<div>DETAILED DESIGN</div> <div>PROJECT ROADS</div> <div>ROAD TO VENTILATION ADIT</div> <div>CROSS SECTION</div> <div>CH 0+225.00-0+265.00</div> <div>SHEET 6 OF 10</div> <div>PROJECT DRAWING</div>	
Prepared	B. Khadka	23.10.17		
Drawn	B. Khadka			
Checked	Roloff			
Approved	Dr. Moeller			
Replaces Drwg. No:				
...				
CAD- File No.:				
Scale A3: 1:200			Drwg. No.: 31-00053-DD-4813-Q 1812	
			REV. —	









1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).



Reference Drawings	
Drwg. No.	Title
31-00053-DD-4813-1800	PROJECT ROADS, GENERAL, LAYOUT

Revisions			
	Name	Date	Notes

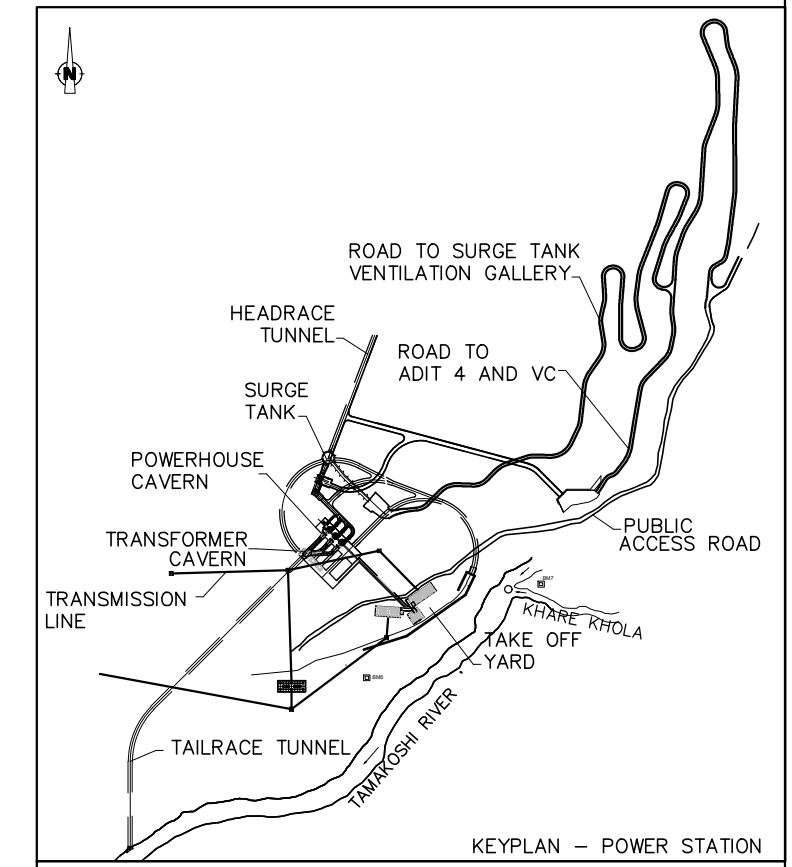
 <p><b>TAMAKOSHI V HYDROELECTRIC PROJECT</b>  <b>PROJECT DEVELOPMENT DEPARTMENT</b>  <b>ENGINEERING SERVICES DIRECTORATE</b>  <b>NEPAL ELECTRICITY AUTHORITY</b></p>	
 <p><b>LAHMEYER</b>  <b>INTERNATIONAL</b></p>	<p><b>CONSULTING ENGINEERS</b>  <b>BAD VILBEL, GERMANY</b></p>



## TAMAKOSHI V HYDROELECTRIC PROJECT DETAILED ENGINEERING DESIGN

	Name	Date	DETAILED DESIGN <u>PROJECT ROADS</u> <u>ROAD TO VENTILATION ADIT</u> CROSS SECTION CH 0+300.00-0+325.00 SHEET 8 OF 10 PROJECT DRAWING
Prepared	B. Khadka	23.10.17	
Drawn	B. Khadka		
Checked	Roloff		
Approved	Dr. Moeller		
Replaces Drwg. No: ...			
CAD- File No.:			
Scale A3: 1:200			Drwg. No.: 31-00053-DD-4813- Q 1812
			REV. -



1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).

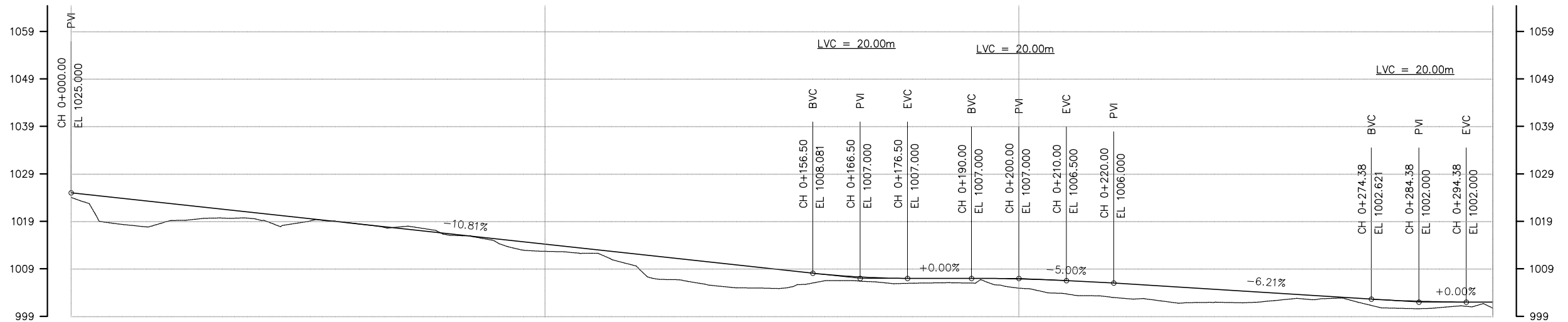


Reference Drawings			
Drwg. No.		Title	
31-00053-DD-4813-1800		PROJECT ROADS, GENERAL, LAYOUT	
Revisions			
	Name	Date	Notes
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;">  <p><b>TAMAKOSHI V HYDROELECTRIC PROJECT</b>  <b>PROJECT DEVELOPMENT DEPARTMENT</b>  <b>ENGINEERING SERVICES DIRECTORATE</b>  <b>NEPAL ELECTRICITY AUTHORITY</b></p> </div> <div style="text-align: center;">  <p><b>LAHMEYER</b>  <b>INTERNATIONAL</b></p> </div> <div style="text-align: center;"> <p><b>CONSULTING ENGINEERS</b>  <b>BAD VILBEL, GERMANY</b></p> </div> </div>			
<b>TAMAKOSHI V HYDROELECTRIC PROJECT</b> <b>DETAILED ENGINEERING DESIGN</b>			
	Name	Date	<b>DETAILED DESIGN</b>  <u>PROJECT ROADS</u>  <u>ROAD TO VENTILATION ADIT</u>  <b>CROSS SECTION</b> <b>CH 0+850.00-0+350.83</b>  <b>SHEET 10 OF 10</b> <b>PROJECT DRAWING</b>
Prepared	B. Khadka	23.10.17	
Drawn	B. Khadka		
Checked	Roloff		
Approved	Dr. Moeller		
Replaces Drwg. No:			
...			
CAD- File No.:			<b>Scale A3: 1:200</b>
Drwg. No.: 31-00053-DD-4813-			<b>Q 1812</b>
REV.			—









DESIGN LEVEL (m)	1025.000	1023.919	1022.838	1021.757	1020.676	1019.595	1018.514	1017.432	1016.351	1015.270	1014.189	1013.108	1012.027	1010.946	1009.865	1008.784	1007.736	1007.114	1007.000	1007.000	1006.875	1006.500	1006.000	1005.379	1004.757	1004.136	1003.515	1002.893	1002.321	1002.030	1002.000
EXISTING LEVEL (m)	1024.064	1018.440	1018.906	1019.681	1019.229	1018.971	1018.542	1017.886	1016.054	1014.483	1012.686	1012.269	1008.856	1006.380	1005.022	1004.897	1006.517	1006.225	1006.001	1005.994	1004.931	1003.714	1002.959	1002.238	1001.931	1001.954	1002.657	1002.387	1000.692	1000.937	1000.737
CHAINAGE (km)	0+000.00	0+010.00	0+020.00	0+030.00	0+040.00	0+050.00	0+060.00	0+070.00	0+080.00	0+090.00	0+100.00	0+110.00	0+120.00	0+130.00	0+140.00	0+150.00	0+160.00	0+170.00	0+180.00	0+190.00	0+200.00	0+210.00	0+220.00	0+230.00	0+240.00	0+250.00	0+260.00	0+270.00	0+280.00	0+290.00	0+299.98

CHAINAGE : 0+000.00 – 0+299.98

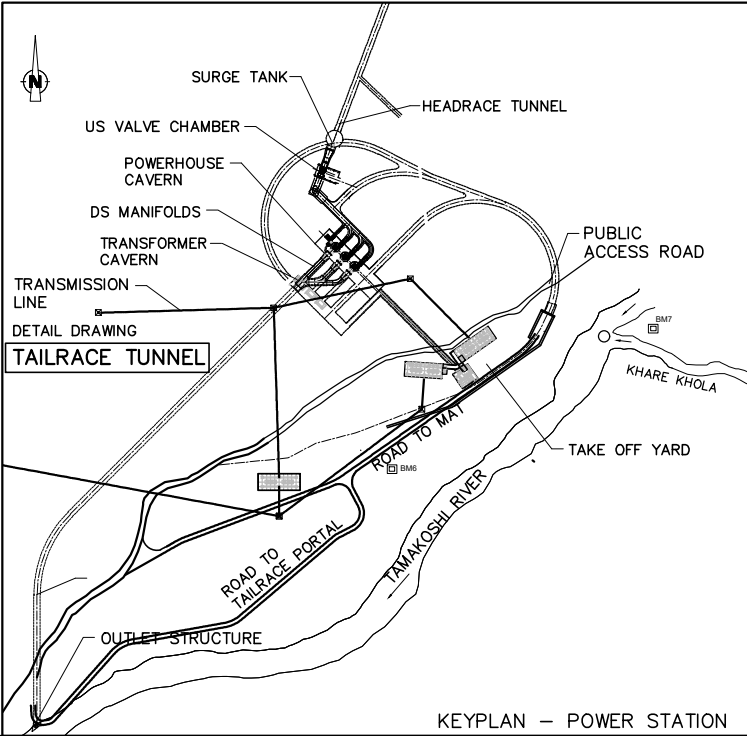
IP.No	CO-ORDINATES(m)		WCB (D-M-S)	DIST (m)	DEF. ANG (D-M-S)	TAN. LEN. (m)	SIMPLE CURVE DATA			CHAINAGE			
	EASTING	NORTHING					R (m)	E (m)	LC (m)	BC	MC	EC	IP
1	420526.872	3071243.970	84-56-24	0.000	00-00-00	0.000	0.000	0.000	0.000	0+000.00	0+000.00	0+000.00	0+000.00
2	420533.479	3071244.555	67-20-01	6.633	17-36-25	4.646	30.000	0.358	9.219	0+001.99	0+006.60	0+011.21	0+006.64
3	420543.845	3071248.884	60-21-14	11.234	06-58-43	3.049	50.000	0.093	6.090	0+014.75	0+017.80	0+020.84	0+017.80
5	420563.652	3071260.157	69-24-24	22.790	09-03-09	3.958	50.000	0.156	7.900	0+036.62	0+040.57	0+044.52	0+040.58
7	420700.641	3071311.629	55-00-00	146.340	14-24-14	8.846	70.000	0.557	17.598	0+178.06	0+186.86	0+195.66	0+186.91



NOTES:

- ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
- ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
- CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).

DRAFT STATUS:  
14.11.2018





Reference Drawings

Drwg. No.	Title
31-00053-DD-4813-1800	PROJECT ROADS, GENERAL, LAYOUT

Revisions

No.	Name	Date	Notes

TAMAKOSHI V HYDROELECTRIC PROJECT  
PROJECT DEVELOPMENT DEPARTMENT  
ENGINEERING SERVICES DIRECTORATE  
NEPAL ELECTRICITY AUTHORITY

LAHMEYER  
INTERNATIONAL

CONSULTING ENGINEERS  
BAD VILBEL, GERMANY

TAMAKOSHI V HYDROELECTRIC PROJECT  
DETAILED ENGINEERING DESIGN

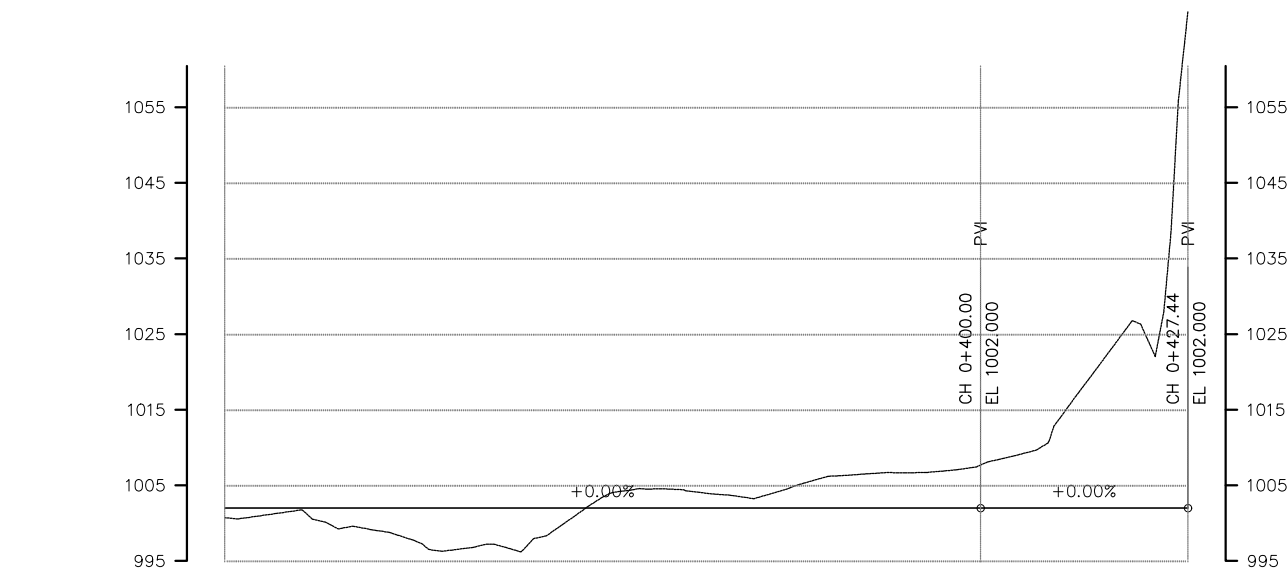
	Name	Date
Prepared	B. Khadka	23.10.17
Drawn	B. Khadka	
Checked	Roloff	
Approved	Dr. Moeller	
Replaces Drwg. No:		
...		
CAD- File No.:		

DETAILED DESIGN  
**PROJECT ROADS**  
**ROAD TO MAT**  
**LONGITUDINAL PROFILE**  
SHEET 1 OF 2  
  
PROJECT DRAWING

Scale A3: 1:1000

Drwg. No.: 31-00053-DD-4813- Q 1814

REV. —



DESIGN LEVEL (m)	1002.000	1002.000	1002.000	1002.000	1002.000	1002.000	1002.000	1002.000	1002.000	1002.000	1002.000	1002.000	1002.000
EXISTING LEVEL (m)	1000.735	1001.728	999.051	996.436	997.018	1003.448	1004.453	1003.242	1006.205	1006.663	1007.674	1013.207	1026.657
CHAINAGE (km)	0+300.00	0+310.00	0+320.00	0+330.00	0+340.00	0+350.00	0+360.00	0+370.00	0+380.00	0+390.00	0+400.00	0+410.00	0+420.00

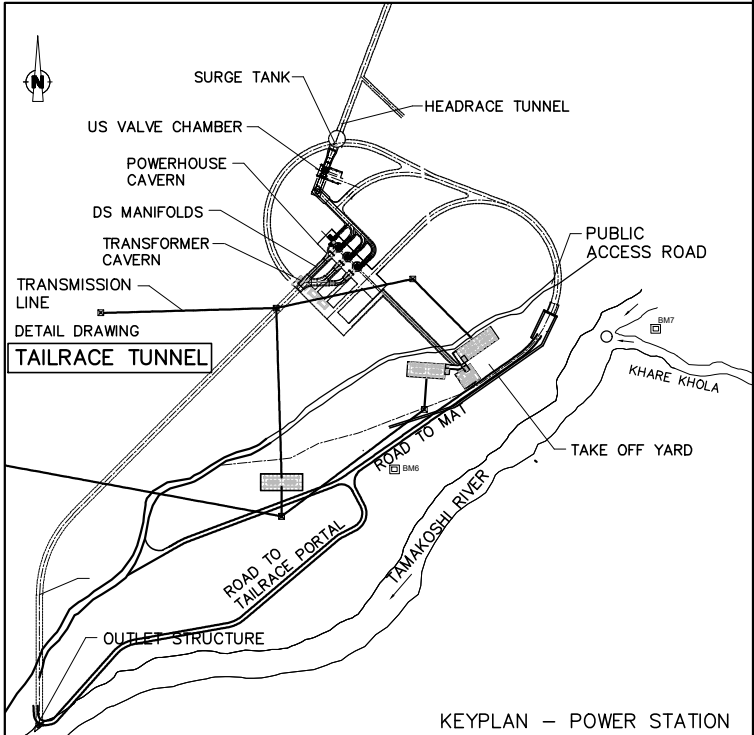
CHAINAGE : 0+300.00 – 0+427.44

IP.No	CO–ORDINATES(m)		WCB (D–M–S)	DIST (m)	DEF. ANG (D–M–S)	TAN. LEN. (m)	SIMPLE CURVE DATA			CHAINAGE			
	EASTING	NORTHING					R (m)	E (m)	LC (m)	BC	MC	EC	IP
9	420873.409	3071432.602	25–51–39	210.911	29–08–26	18.195	70.000	2.326	35.602	0+379.53	0+397.33	0+415.13	0+397.72
10	420886.715	3071460.052	00–00–00	30.505	00–00–00	0.000	0.000	0.000	0.000	0+427.44	0+427.44	0+427.44	0+427.44


DRAFT STATUS:  
14.11.2018

NOTES:


1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO–ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).



Reference Drawings				
Drwg. No.			Title	
31-00053-DD-4813-1800			PROJECT ROADS, GENERAL, LAYOUT	
Revisions				



TAMAKOSHI V HYDROELECTRIC PROJECT  
PROJECT DEVELOPMENT DEPARTMENT  
ENGINEERING SERVICES DIRECTORATE  
NEPAL ELECTRICITY AUTHORITY

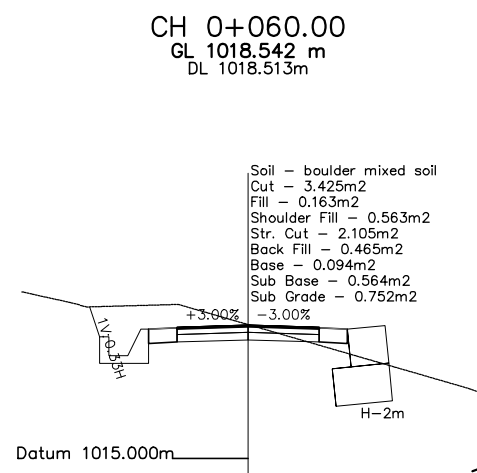
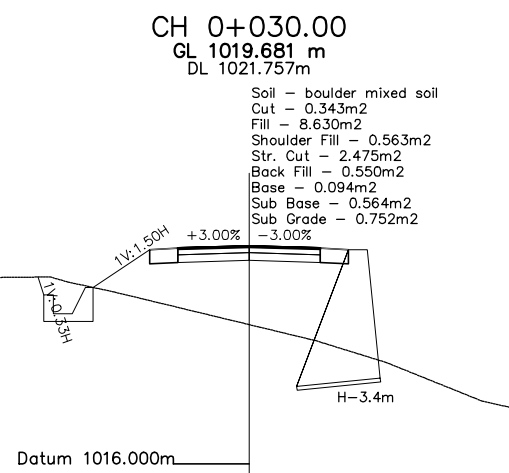
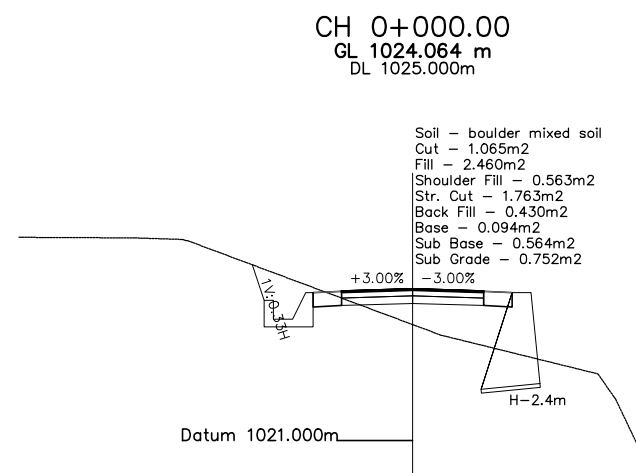
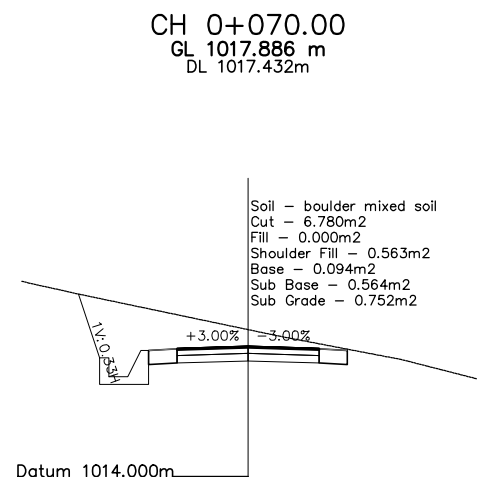
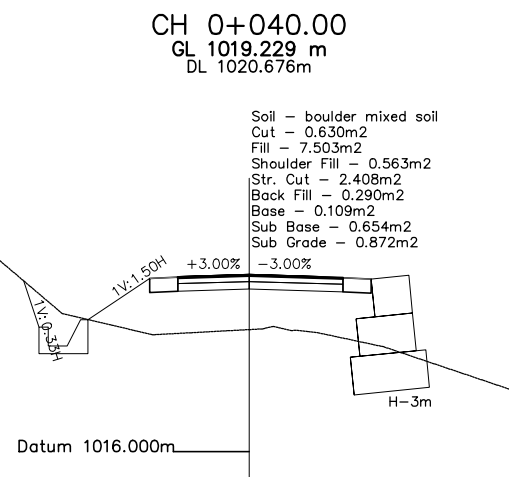
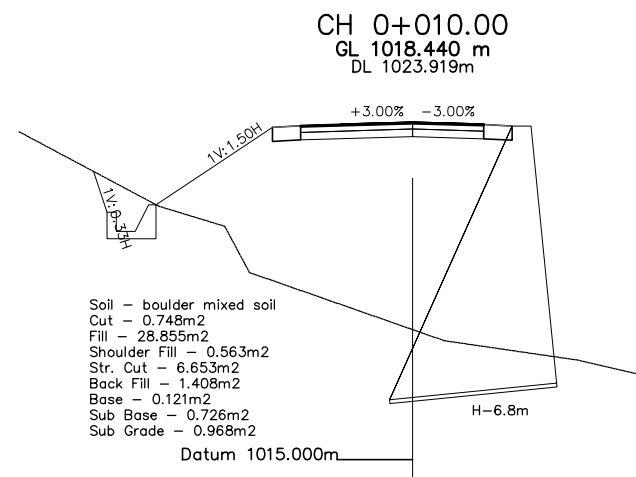
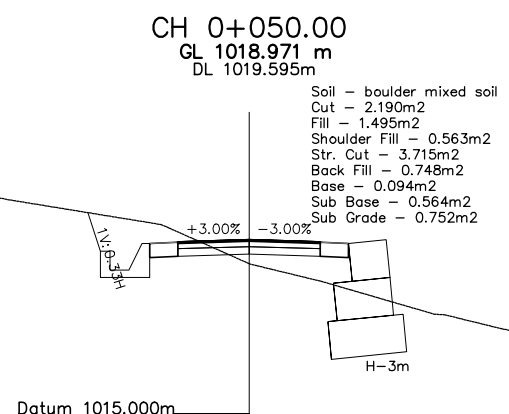


LAHMEYER  
INTERNATIONAL

CONSULTING ENGINEERS  
BAD VILBEL, GERMANY

**TAMAKOSHI V HYDROELECTRIC PROJECT**  
**DETAILED ENGINEERING DESIGN**

	Name	Date	DETAILED DESIGN <b>PROJECT ROADS</b> <b>ROAD TO MAT</b> <b>LONGITUDINAL PROFILE</b> SHEET 2 OF 2	
Prepared	B. Khadka	23.10.17		
Drawn	B. Khadka			
Checked	Roloff			
Approved	Dr. Moeller			
Replaces Drwg. No: ...			PROJECT DRAWING	
CAD– File No.:				
Scale A3:	1:1000	Drwg. No.: 31–00053–DD–4813– Q 1814		
		REV.	–	



	Name	Date	DETAILED DESIGN <u>PROJECT ROADS</u> <u>ROAD TO MAT</u> <u>CROSS SECTION</u> CH 0+000.00-0+080.00 SHEET 1 OF 5 PROJECT DRAWING
Prepared	B. Khadka	23.10.17	
Drawn	B. Khadka		
Checked	Roloff		
Approved	Dr. Moeller		
Replaces Drwg. No:			
...			
CAD- File No.:			
Scale A3: 1:200			Drwg. No: 31-00053-DD-4813- <b>Q 1815</b>
			REV. -

DRAFT STATUS:  
14.11.2018



Diagram illustrating the cross-section of a road structure, showing various layers and dimensions:

- Soil** – boulder mixed soil
- Cut** – 0.000m<sup>2</sup>
- Fill** – 8.933m<sup>2</sup>
- Shoulder Fill** – 0.563m<sup>2</sup>
- Str. Cut** – 1.853m<sup>2</sup>
- Back Fill** – 0.355m<sup>2</sup>
- Base** – 0.094m<sup>2</sup>
- Sub Base** – 0.564m<sup>2</sup>
- Sub Grade** – 0.752m<sup>2</sup>

Additional dimensions and slopes shown in the diagram:

- 1V:1.50H** (Slope)
- +3.34%** (Grade)
- 0.65%** (Grade)
- H=3m** (Shoulder width)
- H=3m** (Base width)
- Datum 1001.000m**

1V:1.5H

+3.00%

-3.00%

H=4m

Datum 999.000m

Soil - boulder mixed soil  
 Cut - 0.000m<sup>2</sup>  
 Fill - 19.463m<sup>2</sup>  
 Shoulder Fill - 0.563m<sup>2</sup>  
 Str. Cut - 3.245m<sup>2</sup>  
 Back Fill - 0.583m<sup>2</sup>  
 Base - 0.094m<sup>2</sup>  
 Sub Base - 0.564m<sup>2</sup>  
 Sub Grade - 0.752m<sup>2</sup>

[illegible]

Diagram illustrating a cross-section of a road embankment with a 4.00% slope. The diagram shows a road surface, a shoulder, and a base. A vertical line indicates the centerline. A horizontal line at the bottom is labeled "Datum 1002.000m". The slope is labeled "H=2.5m". The road surface is labeled "+4.00%". The shoulder is labeled "+4.00%". The base is labeled "H=2.5m".

Soil – boulder mixed soil  
 Cut – 0.070m<sup>2</sup>  
 Fill – 3.240m<sup>2</sup>  
 Shoulder Fill – 0.563m<sup>2</sup>  
 Str. Cut – 1.905m<sup>2</sup>  
 Back Fill – 0.460m<sup>2</sup>  
 Base – 0.107m<sup>2</sup>  
 Sub Base – 0.639m<sup>2</sup>  
 Sub Grade – 0.852m<sup>2</sup>

1V:1.50H

+3.00%

-3.00%

H=4m

Datum 999.000m

- Soil - boulder mixed soil
- Cut - 0.000m<sup>2</sup>
- Fill - 16.923m<sup>2</sup>
- Shoulder Fill - 0.563m<sup>2</sup>
- Str. Cut - 3.055m<sup>2</sup>
- Back Fill - 0.558m<sup>2</sup>
- Base - 0.094m<sup>2</sup>
- Sub Base - 0.564m<sup>2</sup>
- Sub Grade - 0.752m<sup>2</sup>

[illegible]

The diagram illustrates a cross-section of a road embankment. A horizontal line represents the ground surface, sloping downwards from left to right. A vertical line represents the centerline. The embankment is shown on the right side of the centerline. The top of the embankment has a width of 3.61m. The slope of the embankment is 2.70%. The height of the embankment is 2.5m. The embankment is composed of several layers: Soil (boulder mixed soil), Cut (0.080m), Fill (3.158m), Shoulder Fill (0.563m), Str. Cut (2.090m), Back Fill (0.533m), Base (0.107m), Sub Base (0.639m), and Sub Grade (0.852m). A datum of 1003.000m is indicated on the left side of the diagram.

Diagram illustrating a cross-section of a road embankment with the following dimensions and components:

- Top width: 3.61m
- Slope: 2.70%
- Height: H = 2.5m
- Datum: 1003.000m
- Soil - boulder mixed soil
- Cut - 0.080m
- Fill - 3.158m
- Shoulder Fill - 0.563m
- Str. Cut - 2.090m
- Back Fill - 0.533m
- Base - 0.107m
- Sub Base - 0.639m
- Sub Grade - 0.852m

The diagram illustrates a cross-section of a road embankment. The ground surface is shown as a sloped line on the left. The embankment structure includes a base layer, a sub-base, and a shoulder. The top of the embankment is at a height of +3.00m relative to the datum. The shoulder width is 3.00m. The embankment height is 3.5m. The embankment is composed of boulder mixed soil. The layers and their thicknesses are as follows:

- Soil - boulder mixed soil
- Cut - 0.000m<sup>2</sup>
- Fill - 15.683m<sup>2</sup>
- Shoulder Fill - 0.563m<sup>2</sup>
- Str. Cut - 2.243m<sup>2</sup>
- Back Fill - 0.378m<sup>2</sup>
- Base - 0.094m<sup>2</sup>
- Sub Base - 0.564m<sup>2</sup>
- Sub Grade - 0.752m<sup>2</sup>

The datum is 1000.000m.

1V:1.50H

+3.00%

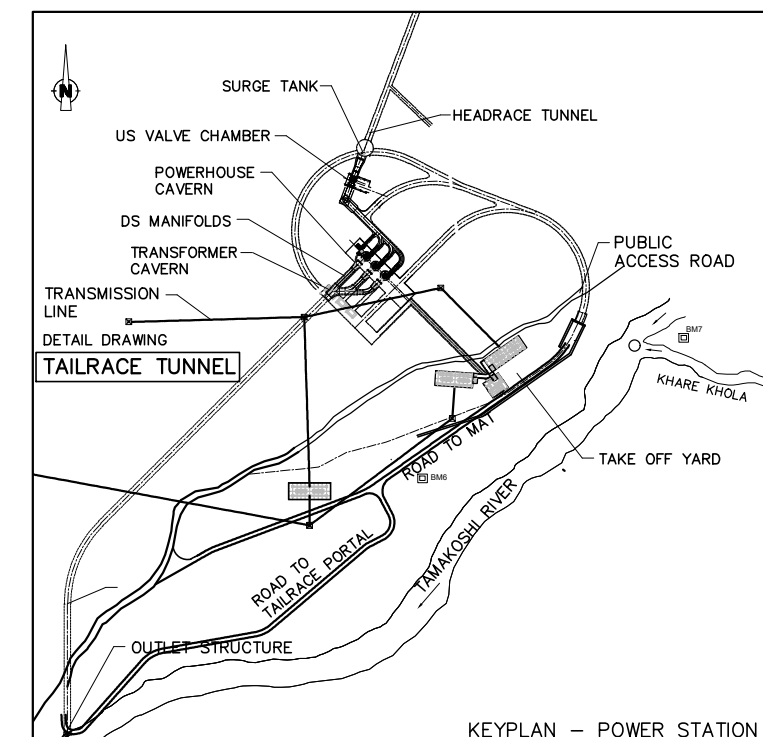
-3.00%

H=3.6m

Datum 998.000m

Soil - boulder mixed soil  
 Cut - 0.003m<sup>2</sup>  
 Fill - 17.530m<sup>3</sup>  
 Shoulder Fill - 0.563m<sup>3</sup>  
 Str. Cut - 2.365m<sup>2</sup>  
 Back Fill - 0.395m<sup>2</sup>  
 Base - 0.094m<sup>2</sup>  
 Sub Base - 0.564m<sup>2</sup>  
 Sub Grade - 0.752m<sup>2</sup>

1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).



Reference Drawings			
Dwg. No.			Title
31-00053-DD-4813-1800			PROJECT ROADS, GENERAL, LAYOUT
Revisions			
	Name	Date	Notes



TAMAKOSHI V HYDROELECTRIC PROJECT  
PROJECT DEVELOPMENT DEPARTMENT  
ENGINEERING SERVICES DIRECTORATE  
NEPAL ELECTRICITY AUTHORITY



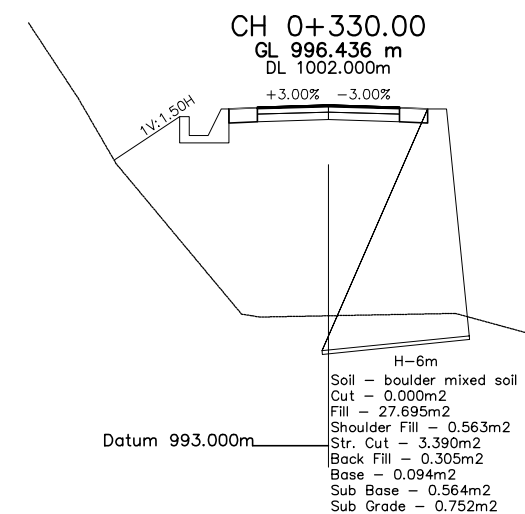
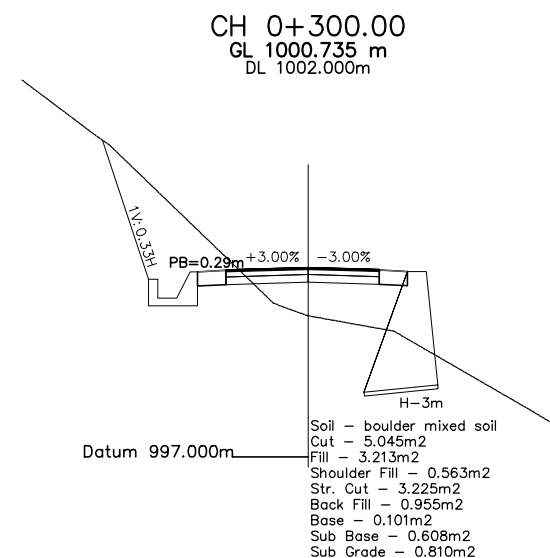
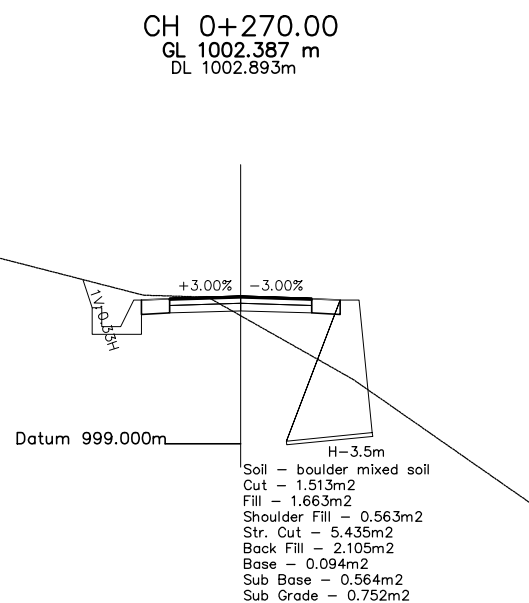
CONSULTING ENGINEERS  
BAD VILBEL, GERMANY

# TAMAKOSHI V HYDROELECTRIC PROJECT

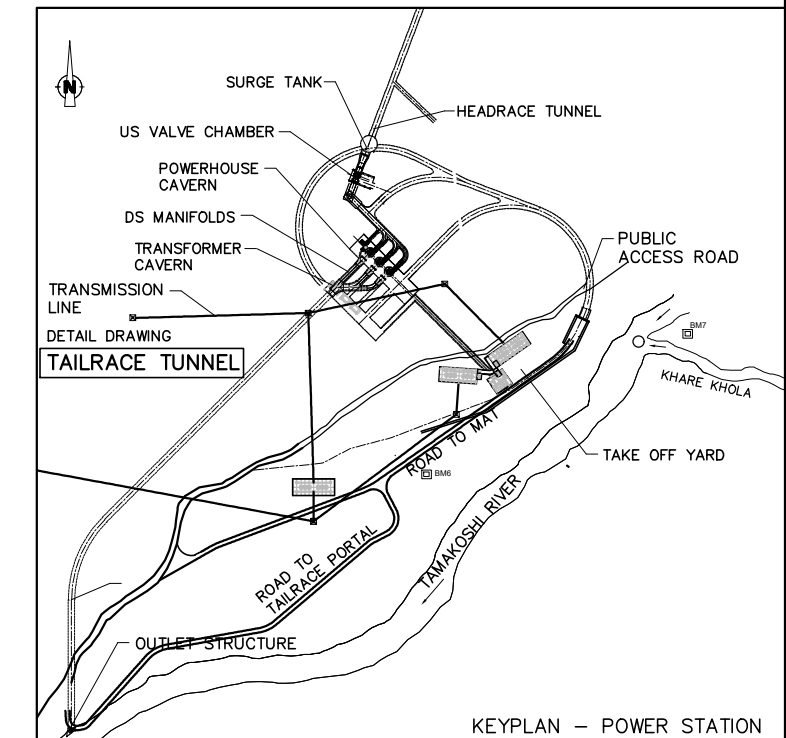
## DETAILED ENGINEERING DESIGN

	Name	Date	DETAILED DESIGN	
Prepared	B. Khadka	23.10.17	<u>PROJECT ROADS</u> <u>ROAD TO MAT</u> <u>CROSS SECTION</u> <u>CH 0+180.00-0+260.00</u> SHEET 3 OF 5 PROJECT DRAWING	
Drawn	B. Khadka			
Checked	Roloff			
Approved	Dr. Moeller			
Replaces Drawg. No: ...				
<u>CAD- File No.:</u>				
Scale A3: 1:200			Drawg. No.: 31-00053-DD-4813- <b>Q 1815</b> REV. -	

DRAFT STATUS:  
14.11.2018



- 



Reference Drawings			
Drwg. No.		Title	
31-00053-DD-4813-1800		PROJECT ROADS, GENERAL, LAYOUT	
Revisions			
	Name	Date	Notes



TAMAKOSHI V HYDROELECTRIC PROJECT  
PROJECT DEVELOPMENT DEPARTMENT  
ENGINEERING SERVICES DIRECTORATE  
NEPAL ELECTRICITY AUTHORITY



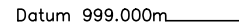
CONSULTING ENGINEERS  
BAD VILBEL, GERMANY

## TAMAKOSHI V HYDROELECTRIC PROJECT

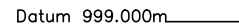
	Name	Date	DETAILED DESIGN
Prepared	B. Khadka	23.10.17	<u>PROJECT ROADS</u> <u>ROAD TO MAT</u> <u>CROSS SECTION</u> <u>CH 0+270.00–0+350.00</u> <u>SHEET 4 OF 5</u> <u>PROJECT DRAWING</u>
Drawn	B. Khadka		
Checked	Roloff		
Approved	Dr. Moeller		
Replaces Drwg. No: ...			
CAD– File No.:			
Scale A3: 1:200			Drwg. No.: 31–00053–DD–4813– <b>Q 1815</b> REV. —

DRAFT STATUS:  
14.11.2018

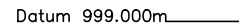
Soil – boulder mixed soil  
Cut – 44.203m<sup>2</sup>  
Fill – 0.000m<sup>2</sup>  
Shoulder Fill – 0.563m<sup>2</sup>  
Base – 0.105m<sup>2</sup>  
Sub Base – 0.627m<sup>2</sup>  
Sub Grade – 0.836m<sup>2</sup>



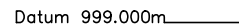
Soil – boulder mixed soil  
Cut – 22.815m<sup>2</sup>  
Fill – 0.295m<sup>2</sup>  
Shoulder Fill – 0.563m<sup>2</sup>  
Base – 0.094m<sup>2</sup>  
Sub Base – 0.564m<sup>2</sup>  
Sub Grade – 0.752m<sup>2</sup>



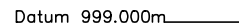
Soil - boulder mixed soil  
Cut - 28.085m2  
Fill - 0.000m2  
Shoulder Fill - 0.563m2  
Base - 0.094m2  
Sub Base - 0.564m2  
Sub Grade - 0.752m2



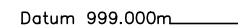
Soil - boulder mixed soil  
Cut - 82.440m<sup>2</sup>  
Fill - 0.000m<sup>2</sup>  
Shoulder Fill - 0.563m<sup>2</sup>  
Base - 0.107m<sup>2</sup>  
Sub Base - 0.639m<sup>2</sup>  
Sub Grade - 0.852m<sup>2</sup>



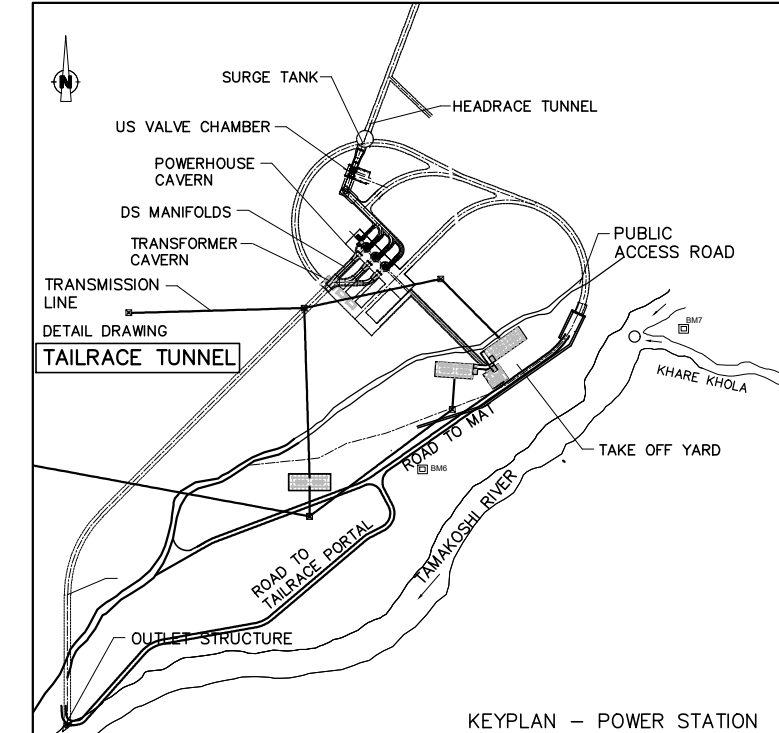
Soil - boulder mixed soil  
Cut - 51.848m<sup>2</sup>  
Fill - 0.000m<sup>2</sup>  
Shoulder Fill - 0.563m<sup>2</sup>  
Base - 0.107m<sup>2</sup>  
Sub Base - 0.639m<sup>2</sup>  
Sub Grade - 0.852m<sup>2</sup>




Soil - boulder mixed soil  
Cut - 128.738m<sup>2</sup>  
Fill - 0.000m<sup>2</sup>  
Shoulder Fill - 0.563m<sup>2</sup>  
Base - 0.107m<sup>2</sup>  
Sub Base - 0.639m<sup>2</sup>  
Sub Grade - 0.852m<sup>2</sup>



1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).

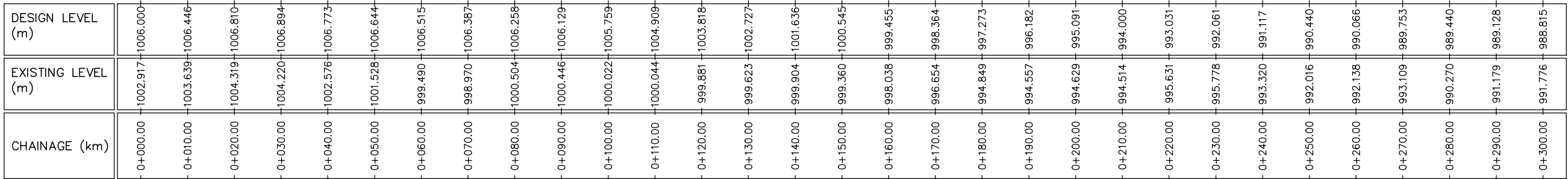



**TAMAKOSHI V HYDROELECTRIC PROJECT**  
**PROJECT DEVELOPMENT DEPARTMENT**  
**ENGINEERING SERVICES DIRECTORATE**  
**NEPAL ELECTRICITY AUTHORITY**

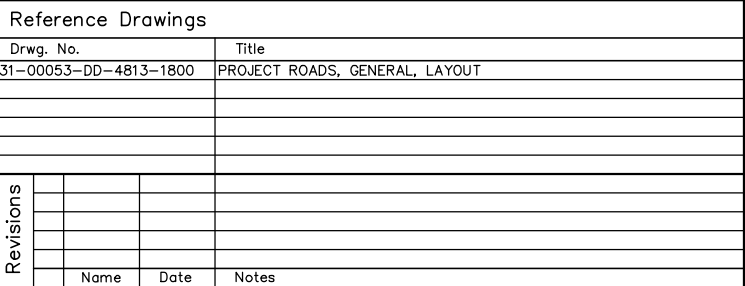
## TAMAKOSHI V HYDROELECTRIC PROJECT DETAILED ENGINEERING DESIGN

	Name	Date	DETAILED DESIGN <u>PROJECT ROADS</u> <u>ROAD TO MAT</u> <u>CROSS SECTION</u> <u>CH 0+360.00–0+410.00</u> SHEET 5 OF 5 PROJECT DRAWING
Prepared	B. Khadka	23.10.17	
Drawn	B. Khadka		
Checked	Roloff		
Approved	Dr. Moeller		
Replaces Drwg. No:			
...			
CAD— File No.:			
Scale A3: 1:200			Drwg. No.: 31–00053–DD–4813– <b>Q 1815</b>
			REV. —

DRAFT STATUS:  
14.11.2018

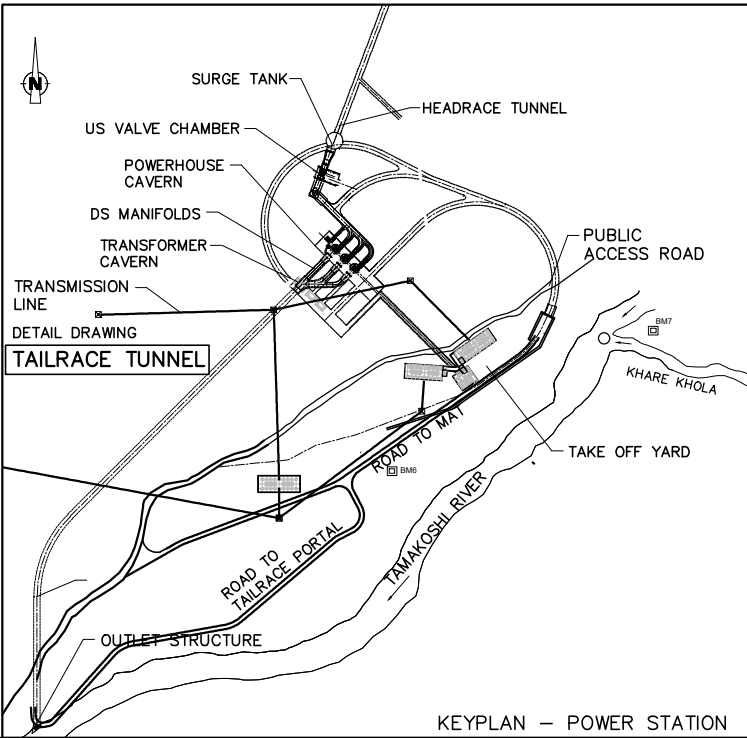




IP.No	CO-ORDINATES(m)		WCB (D-M-S)	DIST (m)	DEF. ANG (D-M-S)	TAN. LEN. (m)	SIMPLE CURVE DATA			CHAINAGE			
	EASTING	NORTHING					R (m)	E (m)	LC (m)	BC	MC	EC	IP
1	420728.230	3071330.946	235-00-02	0.000	00-00-00	0.000	0.000	0.000	0.000	0+000.00	0+000.00	0+000.00	0+000.00
2	420707.934	3071316.735	152-12-16	24.777	82-47-53	13.224	15.000	4.997	21.677	0+011.55	0+022.39	0+033.23	0+024.77
3	420728.250	3071278.195	242-31-26	43.567	90-19-15	15.084	15.000	6.273	23.646	0+048.49	0+060.32	0+072.14	0+063.57
4	420700.369	3071263.696	229-46-12	31.426	12-45-14	1.676	15.000	0.093	3.339	0+086.80	0+088.47	0+090.14	0+088.48
5	420650.194	3071221.250	229-46-14	65.721	00-00-00	0.000	0.000	0.000	0.000	0+154.18	0+154.18	0+154.18	0+154.18
6	420610.086	3071187.321	259-53-09	52.534	30-06-52	8.071	30.000	1.067	15.768	0+198.64	0+206.53	0+214.41	0+206.71
7	420570.933	3071180.337	259-53-09	39.771	00-00-00	0.000	0.000	0.000	0.000	0+246.11	0+246.11	0+246.11	0+246.11
8	420510.293	3071169.520	221-42-21	61.597	38-10-54	10.383	30.000	1.746	19.992	0+297.32	0+307.32	0+317.31	0+307.70



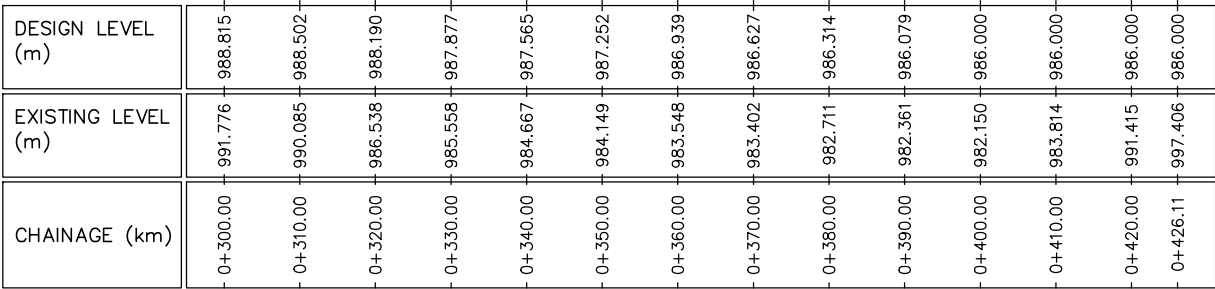
1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).

DRAFT STATUS:  
14.11.2018



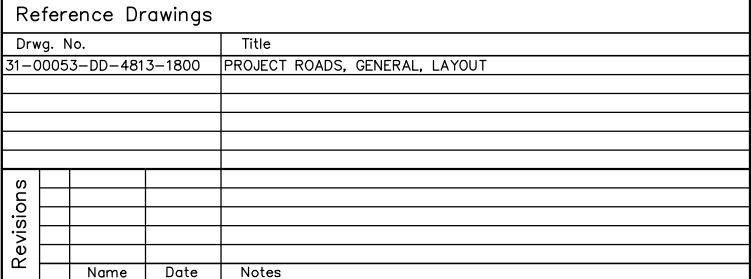
 <div style="display: inline-block; text-align: left; margin-left: 20px;"> <p><b>TAMAKOSHI V HYDROELECTRIC PROJECT</b></p> <p><b>PROJECT DEVELOPMENT DEPARTMENT</b></p> <p><b>ENGINEERING SERVICES DIRECTORATE</b></p> <p><b>NEPAL ELECTRICITY AUTHORITY</b></p> </div>				
 <div style="display: inline-block; vertical-align: middle; margin-left: 10px;"> <p><b>LAHMEYER</b> <b>INTERNATIONAL</b></p> </div>		<p><b>CONSULTING ENGINEERS</b> <b>BAD VILBEL, GERMANY</b></p>		
<p><b>TAMAKOSHI V HYDROELECTRIC PROJECT</b></p> <p><b>DETAILED ENGINEERING DESIGN</b></p>				
	Name	Date	<p>DETAILED DESIGN</p> <p><u>PROJECT ROADS</u></p> <p><u>ROAD TO TAILRACE PORTAL</u></p> <p><u>LONGITUDINAL PROFILE</u></p> <p>SHEET 1 OF 2</p> <p>PROJECT DRAWING</p>	
Prepared	B. Khadka	23.10.17		
Drawn	B. Khadka			
Checked	Roloff			
Approved	Dr. Moeller			
Replaces Drawg. No:				
...				
<p><u>CAD- File No.:</u></p>			<p>Drwg. No.: 31-00053-DD-4813- <b>Q 1817</b></p>	
<p>Scale A3:      1:1000</p>				
			REV.	—





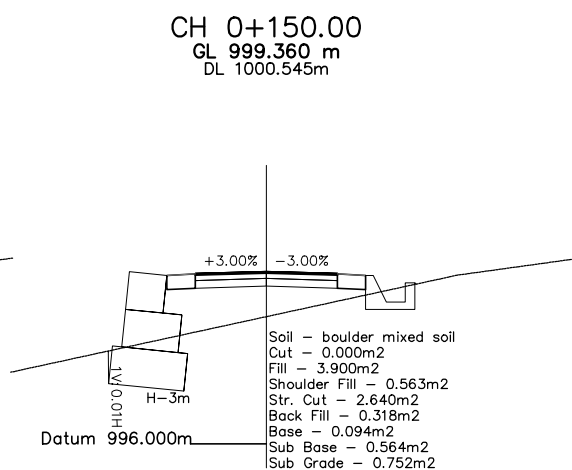
IP.No	CO-ORDINATES(m)		WCB (D-M-S)	DIST (m)	DEF. ANG (D-M-S)	TAN. LEN. (m)	SIMPLE CURVE DATA			CHAINAGE			
	EASTING	NORTHING					R (m)	E (m)	LC (m)	BC	MC	EC	IP
8	420510.293	3071169.520	221-42-21	61.597	38-10-54	10.383	30.000	1.746	19.992	0+297.32	0+307.32	0+317.31	0+307.70
9	420490.799	3071147.645	221-42-20	29.301	00-00-00	0.000	0.000	0.000	0.000	0+336.23	0+336.23	0+336.23	0+336.23
10	420449.072	3071100.821	261-00-15	62.719	39-17-57	2.856	8.000	0.495	5.487	0+396.09	0+398.84	0+401.58	0+398.95
11	420434.095	3071098.450	356-40-19	15.164	95-40-00	8.833	8.000	3.917	13.358	0+405.05	0+411.73	0+418.41	0+413.88
12	420433.135	3071114.960	00-00-00	16.538	00-00-00	0.000	0.000	0.000	0.000	0+426.11	0+426.11	0+426.11	0+426.11

- 



DRAFT STATUS:  
14.11.2018

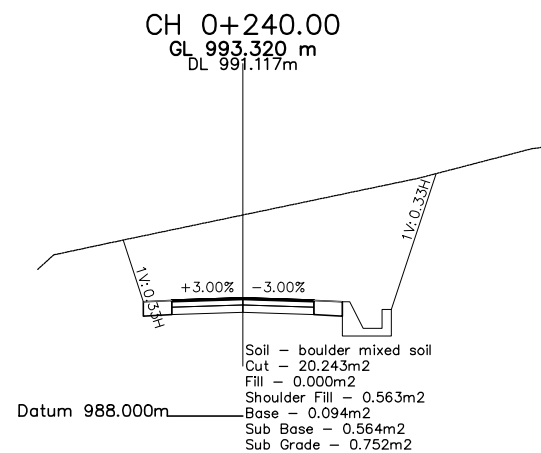
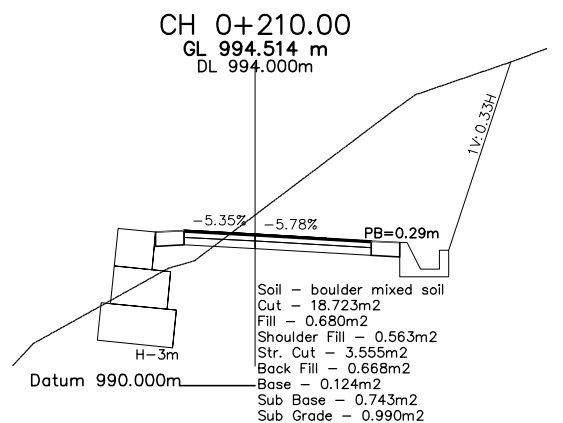
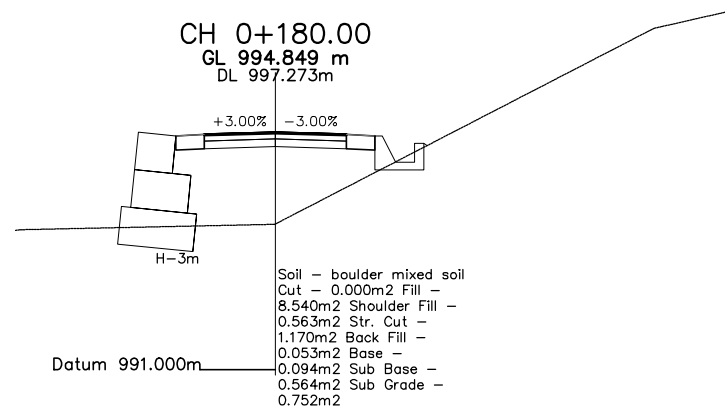
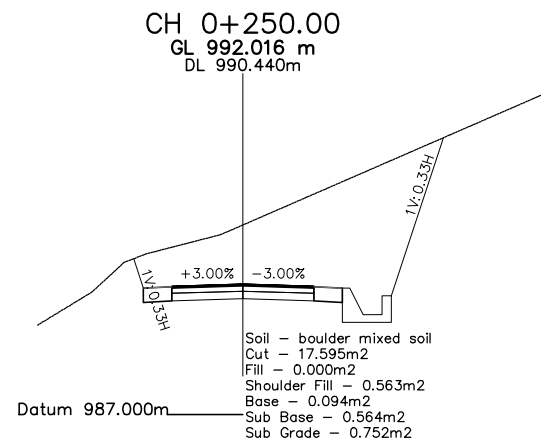
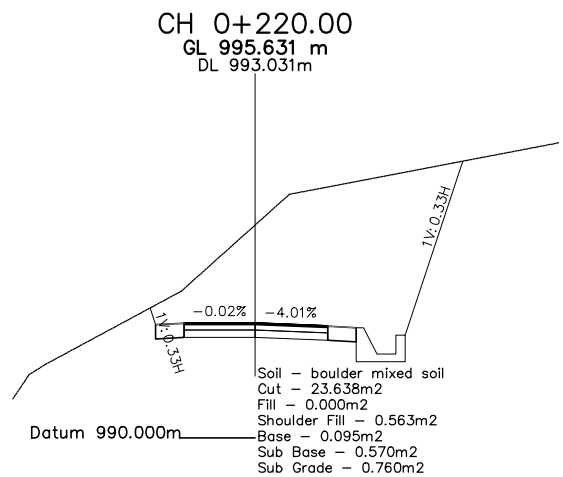
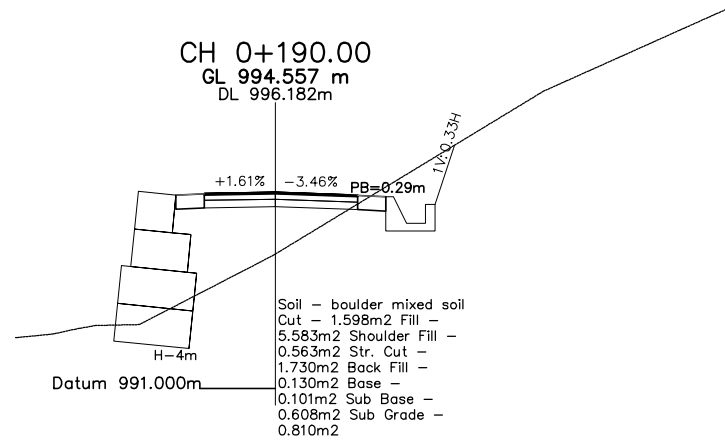
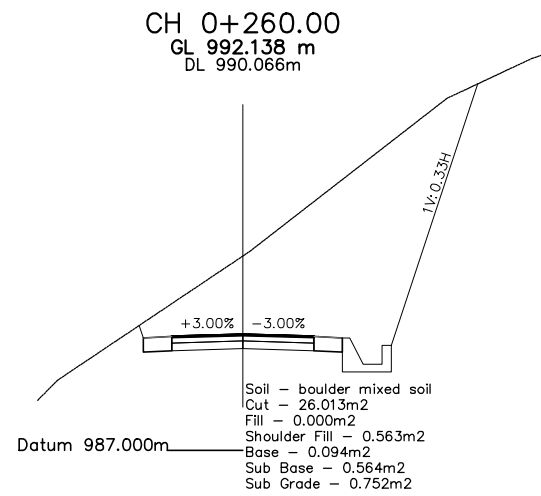
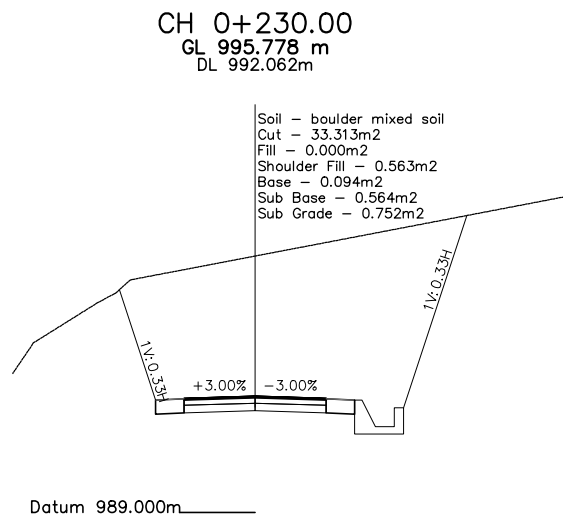
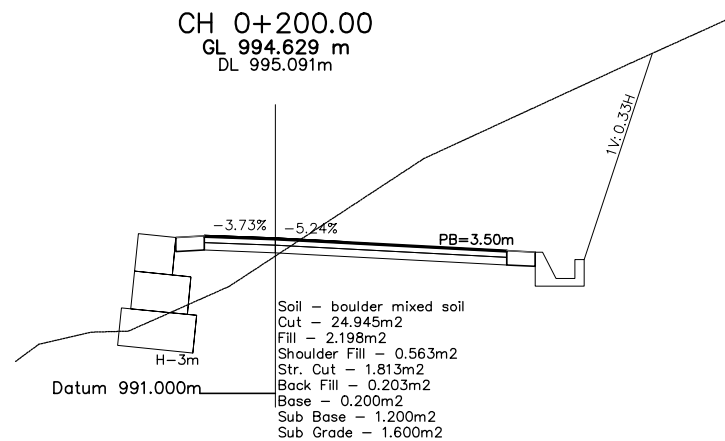




- |                    |             |          |  |
|--------------------|-------------|----------|--|
|                    | Name        | Date     | DETAILED DESIGN<br><u>PROJECT ROADS</u><br><u>ROAD TO TAILRACE PORTAL</u><br><u>CROSS SECTION</u><br>CH 0+090.00–0+170.00<br>SHEET 2 OF 5<br>PROJECT DRAWING |
| Prepared           | B. Khadka   | 23.10.17 |  |
| Drawn              | B. Khadka   |          |  |
| Checked            | Roloff      |          |  |
| Approved           | Dr. Moeller |          |  |
| Replaces Drwg. No: |             |          |  |
| ...                |             |          |  |
| CAD– File No.:     |             |          |  |
| Scale A3: 1:200    |             |          | Drwg. No.: 31–00053–DD–4813– <b>Q 1818</b> REV. –  |

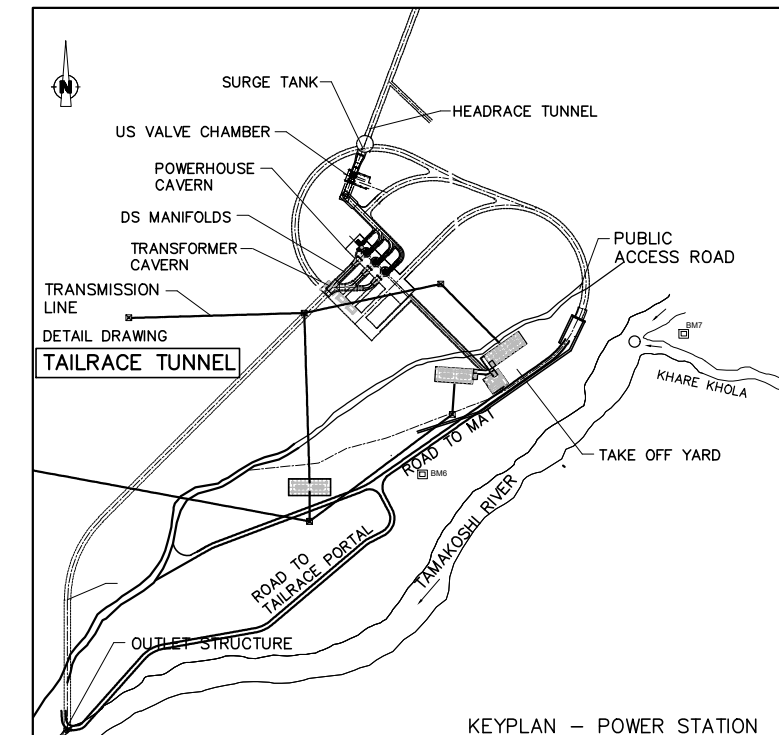
0.752m2

DRAFT STATUS:  
14.11.2018



## NOTES:

1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).



Reference Drawings				
Drwg. No.			Title	
31-00053-DD-4813-1800			PROJECT ROADS, GENERAL, LAYOUT	
Revisions				
	Name	Date	Notes	



TAMAKOSHI V HYDROELECTRIC PROJECT  
PROJECT DEVELOPMENT DEPARTMENT  
ENGINEERING SERVICES DIRECTORATE  
NEPAL ELECTRICITY AUTHORITY



CONSULTING ENGINEERS  
BAD VILBEL, GERMANY

## TAMAKOSHI V HYDROELECTRIC PROJECT DETAILED ENGINEERING DESIGN

	Name	Date	
Prepared	B. Khadka	23.10.17	DETAILED DESIGN  <b>PROJECT ROADS</b> <b>ROAD TO TAILRACE PORTAL</b> <b>CROSS SECTION</b> <b>CH 0+180.00-0+260.00</b> <b>SHEET 3 OF 5</b> <b>PROJECT DRAWING</b>
Drawn	B. Khadka		
Checked	Roloff		
Approved	Dr. Moeller		
Replaces Drwg. No:			
CAD- File No.:			
Scale A3:	1:200		
Drwg. No.: 31-00053-DD-4813- Q 1818			REV. -

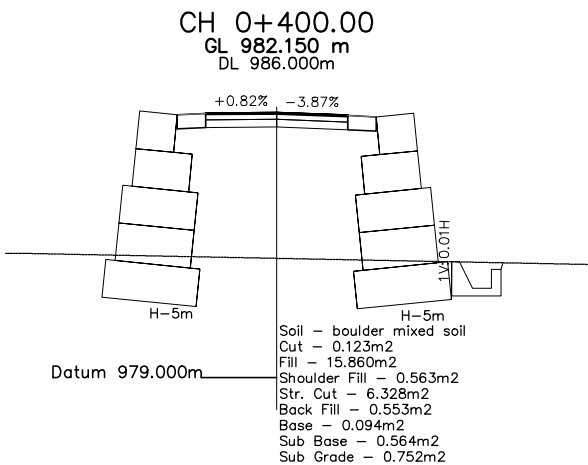
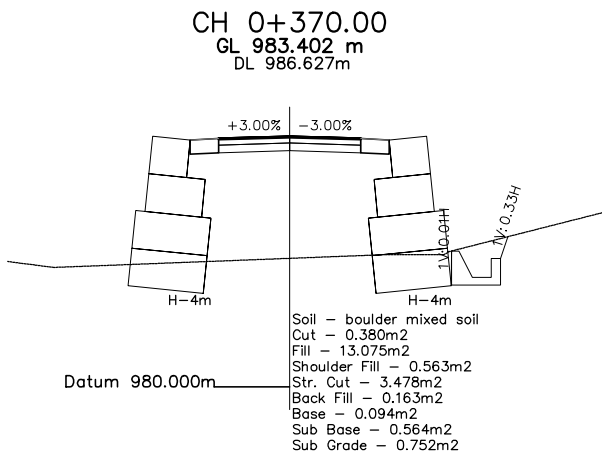
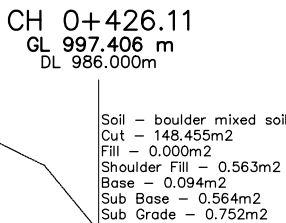
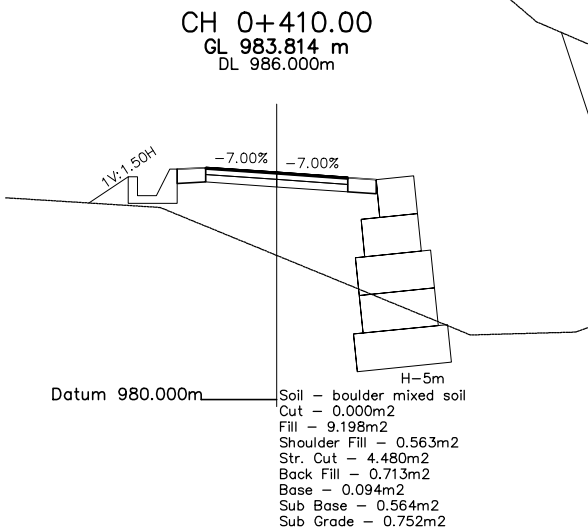
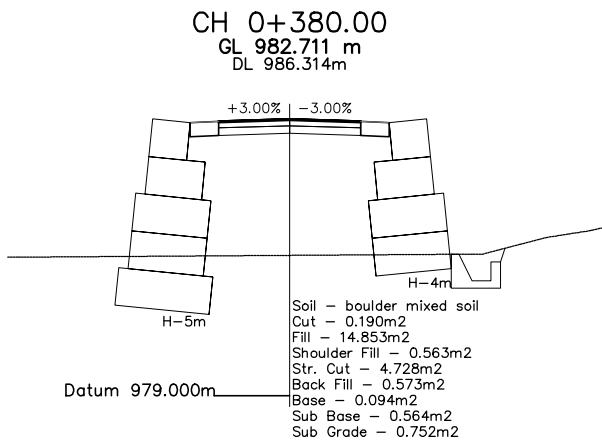
DRAFT STATUS:  
14.11.2018



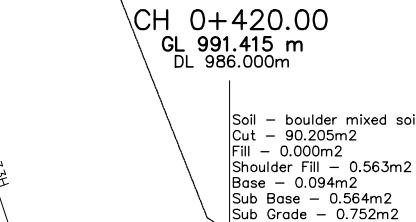
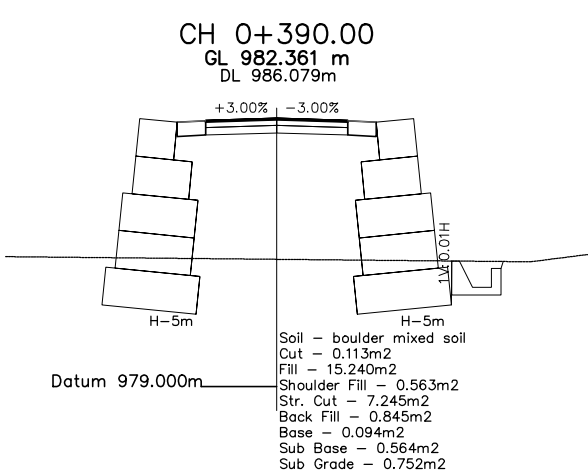
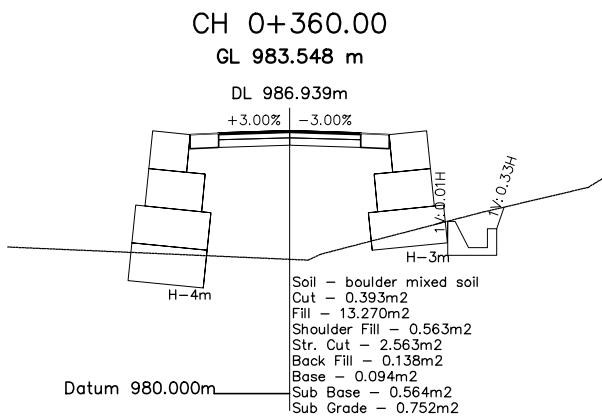


NOTES:

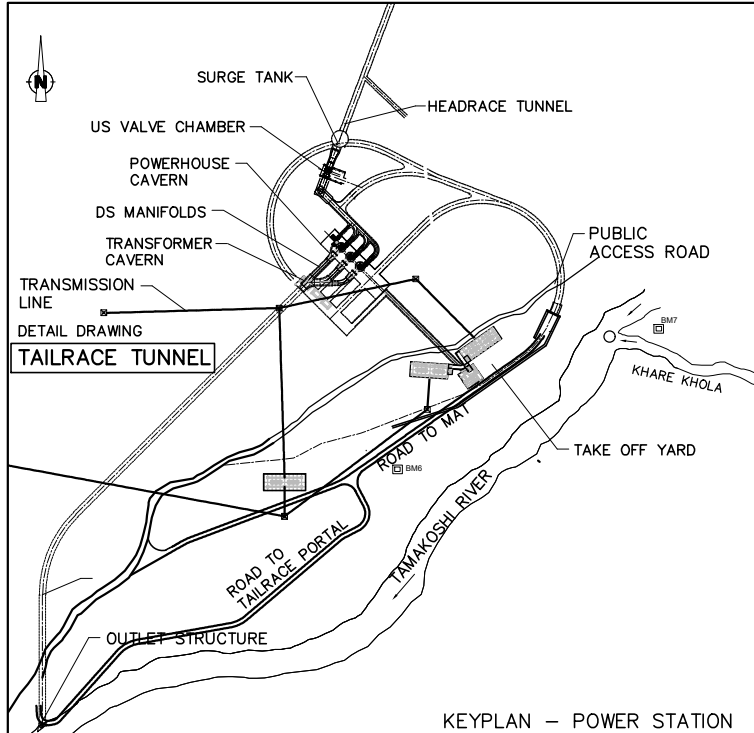
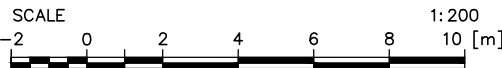
1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).



Datum 983.000m



Datum 983.000m



Reference Drawings

Drwg. No.	Title
31-00053-DD-4813-1800	PROJECT ROADS, GENERAL, LAYOUT

Revisions

No.	Name	Date	Notes



TAMAKOSHI V HYDROELECTRIC PROJECT  
PROJECT DEVELOPMENT DEPARTMENT  
ENGINEERING SERVICES DIRECTORATE  
NEPAL ELECTRICITY AUTHORITY

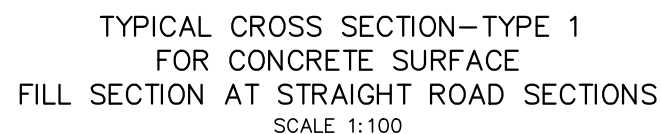


CONSULTING ENGINEERS  
BAD VILBEL, GERMANY

TAMAKOSHI V HYDROELECTRIC PROJECT  
DETAILED ENGINEERING DESIGN




Name	Date	DETAILLED DESIGN
Prepared B. Khadka	23.10.17	PROJECT ROADS
Drawn B. Khadka		ROAD TO TAILRACE PORTAL
Checked Roloff		CROSS SECTION
Approved Dr. Moeller		CH 0+360.00-0+426.11
Replaces Drwg. No:		SHEET 5 OF 5
...		PROJECT DRAWING
CAD- File No.:		
Scale A3: 1:200		Drwg. No.: 31-00053-DD-4813- Q 1818 REV. -



DRAFT STATUS:  
14.11.2018

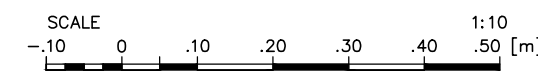


- NOTES:**
1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
  2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
  3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).
  4. TYPE OF PAVEMENT AS SHOWN SHALL BE APPLIED IN ACCORDANCE WITH THE RELEVANT LAYOUT DRAWING AND MIGHT SUBJECT TO MODIFICATION DEPEND ON GEOLOGICAL CONDITION AS ENCOUNTERED AT SITE.
  5. TREATMENT AND COMPACTION SHALL BE IN ACCORDANCE WITH THE RELEVANT SPECIFICATION.
  6. GEOTEXTILE UNDERNEATH OF SUBBASE AS INDICATED SHALL BE PLACED ONLY WHERE FOUNDATION CONDITION REQUIRES, I.E. CBR VALUE IS POOR.

LEGEND:



-  CONCRETE CLASS C1 – FIRSTS STAGE CONCRETE C25/30  
 CONCRETE CLASS B – CONCRETE C20/25  
 CONCRETE CLASS F – BLINDING CONCRETE C12/15

CH	CHAINAGE [m]
AZ	AZIMUTH [°]
	ELEVATION
	FIX POINT



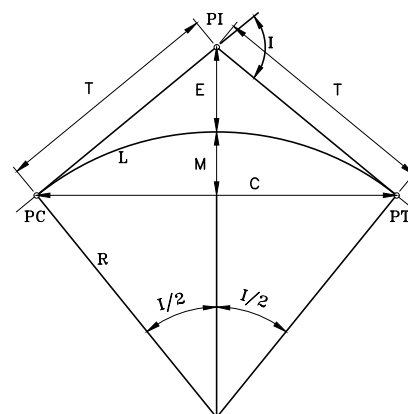
DRAFT STATUS:  
13.11.2017



Reference Drawings				
Drwg. No.		Title		
Revisions				
	Name	Date	Notes	
 <div> <p><b>TAMAKOSHI V HYDROELECTRIC PROJECT</b></p> <p>PROJECT DEVELOPMENT DEPARTMENT</p> <p>ENGINEERING SERVICES DIRECTORATE</p> <p>NEPAL ELECTRICITY AUTHORITY</p> </div>				
 <p><b>LAHMEYER</b> INTERNATIONAL</p>			<p>CONSULTING ENGINEERS BAD VILBEL, GERMANY</p>	
<p align="center"><b>TAMAKOSHI V HYDROELECTRIC PROJECT</b></p> <p align="center"><b>DETAILED ENGINEERING DESIGN</b></p>				
	Name	Date	DETAILED DESIGN	
Prepared	B. Khadka	31.07.17	<p><u>PROJECT ROADS</u></p> <p><u>ROAD DESIGN DETAILS</u></p> <p>TYPICAL SECTIONS AND DETAILS</p> <p>PROJECT DRAWING</p>	
Drawn	B. Khadka			
Checked	Roloff			
Approved	Dr. Moeller			
Replaces Drwg. No: 31-00053-DD-4813-Y-0000_-				
<u>CAD- File No.:</u>				
Scale A3:	1:100, 1:10		Drwg. No.: 31-00053-DD-4813- <b>Q 1850</b>   REV. -	

BOP	BEGINNING OF PROJECT
CBR	CALIFORNIA BEARING RATIO
CL	CENTER LINE
CURVE LEN	VERTICAL CURVE LENGTH
DBM	DENSE BITUMINOUS MACADAM
E	EXTERNAL DISTANCE
EL	ELEVATION
EOP	END OF PROJECT
I	CIRCULAR DEFLECTION ANGLE
K	K-FACTOR (VERTICAL CURVE)
PAR	PUBLIC ACCESS ROAD SINGATI/BAZAR-LAMABAGAR
L	LENGTH OF HORIZONTAL CURVE
m	METER
m asl.	METERS ABOVE SEA LEVEL
MAX.	MAXIMUM
MIN.	MINIMUM
mm	MILLIMETER
MDD	MAXIMUM DRY DENSITY
NSL	NATURAL SURFACE LEVEL
PC	POINT OF HORIZONTAL CURVATURE (START OF HORIZONTAL CURVE)
PMC	PREMIX CARPET
PI	POINT OF HORIZONTAL INTERSECTION
PT	POINT OF HORIZONTAL TANGENCY (END OF HORIZONTAL CURVE)
R	RADIUS OF HORIZONTAL CURVE
STA	STATION (CHAINAGE)
T	TANGENT LENGTH OF HORIZONTAL CURVE
t	THICKNESS
VPC	VERTICAL POINT OF CURVATURE (START OF VERTICAL CURVE)
VPI	VERTICAL POINT OF INTERSECTION OF PROFILE GRADE.
VPT	VERTICAL POINT OF TANGENCY (END OF VERTICAL CURVE)
O.G.L	ORIGINAL GROUND LEVEL
g1	GRADE OF INITIAL TANGENT IN PERCENT (IN VERTICAL CURVE)
g2	GRADE OF FINAL TANGENT IN PERCENT (IN VERTICAL CURVE)

1. ALL DIMENSIONS SHOWN ON PLAN AND PROFILE DRAWINGS ARE IN METERS UNLESS OTHERWISE INDICATED. ANGULAR MEASUREMENTS ARE IN DEGREES, MINUTES AND SECONDS.
2. ALL DRAWINGS OF PLANS AND PROFILES SHALL BE READ IN CONJUNCTION WITH EACH OTHER.
3. THE SCALES SHOWN ON DRAWINGS ARE FOR THE DRAWINGS PRINTED ON A3 PAPER.
4. ROAD STRUCTURES SHOWN ON PLAN AND PROFILE ARE TENTATIVE. FOR DETAILS OF STRUCTURES AND PROTECTION WORKS, SEE RELEVANT DRAWINGS.
5. THE CUT SLOPES SHOWN ON DRAWINGS ARE TYPICAL AND SUBJECT TO CHANGE AS PER SITE CONDITIONS, ACCORDING TO DIRECTIONS OF THE ENGINEER.
6. THE LOCATIONS OF STRUCTURES SHOWN ON DRAWINGS ARE TENTATIVE AND SUBJECT TO CHANGE AS PER SITE CONDITIONS, ACCORDING TO DIRECTIONS OF THE ENGINEER.
7. CONCRETE CURB STONES & OTHER ANCILLARY ITEMS SHALL BE PROVIDED AS DIRECTED BY THE ENGINEER.
8. ALL CURVES SHOWN ON PLAN DRAWINGS ARE OF CIRCULAR TYPE.
9. ALL CURVES SHOWN ON PROFILE DRAWINGS ARE OF PARABOLIC TYPE.
10. PAVEMENT DESIGN SUBJECT TO CHANGE ON ACTUAL CBR VALUE DETERMINATION.
11. ANY DAMAGE DONE TO THE UTILITIES DURING EXCAVATION/EXECUTION OF WORK SHALL BE IMMEDIATELY REPAIRED TO THE SATISFACTION OF CONCERNED AGENCY BY THE CONTRACTOR AT HIS OWN COST.
12. THE PROVISION OF DIVERSION AND ITS MAINTENANCE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.




CURVE PARAMETERS IN PROFILE

1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).
4. ROAD CONSTRUCTION AND DESIGN SHALL COMPILE WITH LATEST NEPAL ROAD DESIGN STANDARD.

DRAFT STATUS:  
06.11.2018

Reference Drawings			
Drwg. No.		Title	
Revisions			
	Name	Date	Notes




**TAMAKOSHI V HYDROELECTRIC PROJECT**

PROJECT DEVELOPMENT DEPARTMENT

ENGINEERING SERVICES DIRECTORATE

NEPAL ELECTRICITY AUTHORITY



**LAHMEYER**  
INTERNATIONAL

CONSULTING ENGINEERS

BAD VILBEL, GERMANY

**TAMAKOSHI V HYDROELECTRIC PROJECT**

**DETAILED ENGINEERING DESIGN**

	Name	Date	<p>DETAILED DESIGN</p> <p><u>PROJECT ROADS</u></p> <p><u>ROAD DESIGN DETAILS</u></p> <p>ABBREVIATIONS AND GENERAL NOTES</p> <p>PROJECT DRAWING</p>
Prepared	B. Khadka	31.07.17	
Drawn	B. Khadka		
Checked	Roloff		
Approved	Dr. Moeller		
Replaces Drwg. No: 31-00053-DD-4813-Y-0000_-			
CAD- File No.:			

Scale A3: NOT IN SCALE

Drwg. No.: 31-00053-DD-4813- **Q 1851** | REV. **1**




SYMBOLS

- NOTES:
1. ALL DIMENSIONS ARE IN METERS [mm] UNLESS OTHERWISE NOTED.
  2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
  3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).
  4. ROAD CONSTRUCTION AND DESIGN SHALL COMPILE WITH LATEST NEPAL ROAD DESIGN STANDARD.


DESIGN CENTER LINE		NORTH		NATURAL SURFACE LEVEL (NSL)	
LAND ACQUISITION		BORE HOLE (STRUCTURES)		ROAD SURFACE LEVEL (RSL)	
TREES		POTENTIAL QUARRY AREA		BOX CULVERT / SUBWAY	
BUSHES		POTENTIAL BORROW AREA		PIPE CULVERT	
TEMPLE		BORE HOLE (ROADWAY)		CAUSEWAY	
PERMANENT HOUSE / TEMPORARY		MARSH		LIGHT POLE	
GRAVES / GRAVE YARD		DEPRESSION		RIP. RAP	
UNMETTALED TRACK		CONTOUR		FENCE	
METALLED ROAD		CHAINAGE POINT		KOLSHI	
ELECTRIC POLE		PROPERTY / OWNERSHIP BOUNDARY		TEMPLE	
TRANSMISSION LINE WITH TOWER		RIGHT OF WAY (R.O.W)		GRID	
		BRIDGE		SLOPE	

DRAFT STATUS:  
06.11.2018

Reference Drawings				
Drwg. No.			Title	
Revisions				
	Name	Date	Notes	



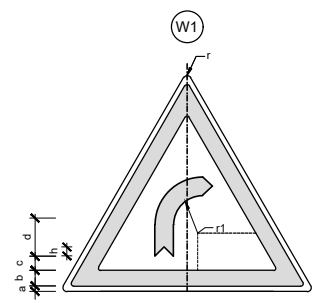
TAMAKOSHI V HYDROELECTRIC PROJECT  
PROJECT DEVELOPMENT DEPARTMENT  
ENGINEERING SERVICES DIRECTORATE  
NEPAL ELECTRICITY AUTHORITY

LAHMEYER  
INTERNATIONAL

CONSULTING ENGINEERS  
BAD VILBEL, GERMANY

TAMAKOSHI V HYDROELECTRIC PROJECT  
DETAILED ENGINEERING DESIGN

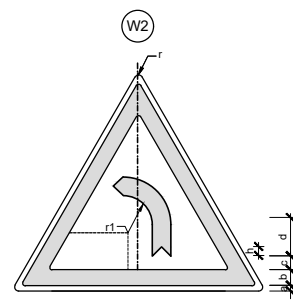
	Name	Date	DETAILED DESIGN  PROJECT ROADS  ROAD DESIGN DETAILS  SYMBOL  PROJECT DRAWING		
Prepared	B. Khadka	31.07.17			
Drawn	B. Khadka				
Checked	Roloff				
Approved	Dr. Moeller				
Replaces Drwg. No: 31-00053-DD-4813-Y-0000_-					
CAD- File No.:					
Scale A3: NOT IN SCALE			Drwg. No.: 31-00053-DD-4813- Q 1852	REV.	-



CURVE TOWARDS RIGHT

DIMENSION(cm)

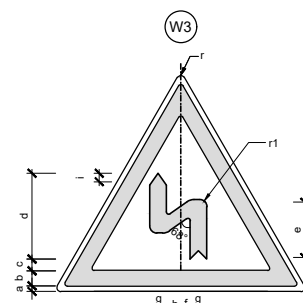
PARTS	SIGN SIZE	
	90cm	105cm
r	3.5	4.1
a	1.0	1.2
b	6.5	7.6
c	4.0	4.7
d	11.5	13.4
e	8.5	9.9
f	7.0	8.2
g	6.0	7.0
h	3.5	4.1
r1	12.5	14.6



CURVE TOWARDS LEFT

DIMENSION(cm)

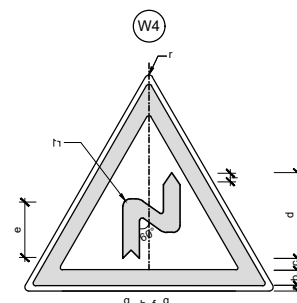
PARTS	SIGN SIZE	
	90cm	105cm
r	3.5	4.1
a	1.0	1.2
b	6.5	7.6
c	4.0	4.7
d	11.5	13.4
e	8.5	9.9
f	7.0	8.2
g	6.0	7.0
h	3.5	4.1
r1	12.5	14.6



MULTIPLE CURVES (FIRST TO LEFT)

DIMENSION(cm)

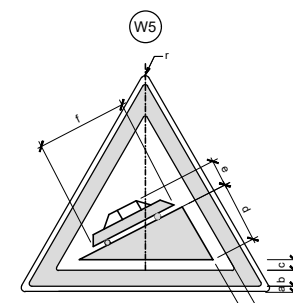
PARTS	SIGN SIZE	
	90cm	105cm
r	3.5	4.1
a	1.0	1.2
b	6.5	7.6
c	3.0	3.5
d	33.0	38.5
e	14.0	16.3
f	8.0	9.3
g	7.0	8.2
h	2.0	2.3
i	3.5	4.1
r1	4.5	5.2



MULTIPLE CURVES (FIRST TO RIGHT)

DIMENSION(cm)

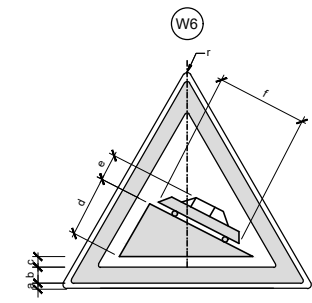
PARTS	SIGN SIZE	
	90cm	105cm
r	3.5	4.1
a	1.0	1.2
b	6.5	7.6
c	3.0	3.5
d	33.0	38.5
e	14.0	16.3
f	8.0	9.3
g	7.0	8.2
h	2.0	2.3
i	3.5	4.1
r1	4.5	5.2



UP-GRADE SIGN

DIMENSION(cm)

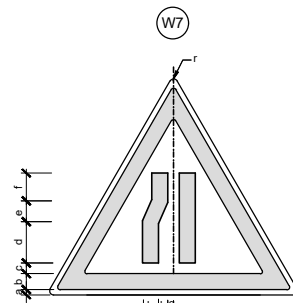
PARTS	SIGN SIZE	
	90cm	105cm
r	3.5	4.1
a	1.0	1.2
b	6.5	7.6
c	3.5	4.1
d	23.5	27.4
e	11.5	13.4
f	33.0	38.5



DOWN GRADE SIGN

DIMENSION(cm)

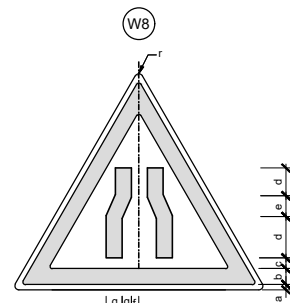
PARTS	SIGN SIZE	
	90cm	105cm
r	3.5	4.1
a	1.0	1.2
b	6.5	7.6
c	3.5	4.1
d	23.5	27.4
e	11.5	13.4
f	33.0	38.5



LANE AT LEFT ENDS

DIMENSION(cm)

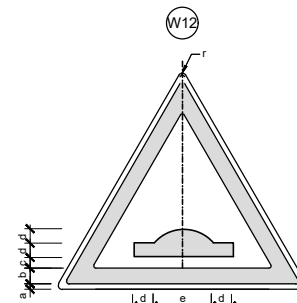
PARTS	SIGN SIZE	
	90cm	105cm
r	3.5	4.1
a	1.0	1.2
b	6.5	7.6
c	3.0	3.5
d	14.0	16.3
e	7.2	8.4
f	11.3	13.2
g	3.5	4.1
h	5.0	5.8



ROADWAY NARROWS

DIMENSION(cm)

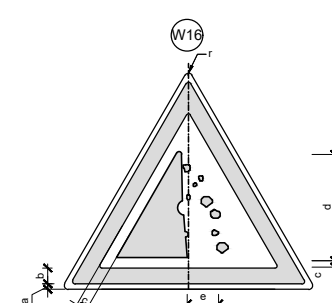
PARTS	SIGN SIZE	
	90cm	105cm
r	3.5	4.1
a	1.0	1.2
b	6.5	7.6
c	3.5	4.1
d	10.0	11.7
e	14.0	16.3
f	2.5	2.9
g	5.0	5.8



HUMP RIDGE

DIMENSION(cm)

PARTS	SIGN SIZE	
	90cm	105cm
r	3.5	4.1
a	1.0	1.2
b	6.5	7.6
c	4.0	4.7
d	7.0	8.2
e	32.0	37.3



FALLING ROCKS



DIMENSION(cm)

PARTS	SIGN SIZE	
	90cm	105cm
r	3.5	4.1
a	1.0	1.2
b	6.5	7.6
c	3.5	4.1
d	38.0	44.3
e	12.0	14.0

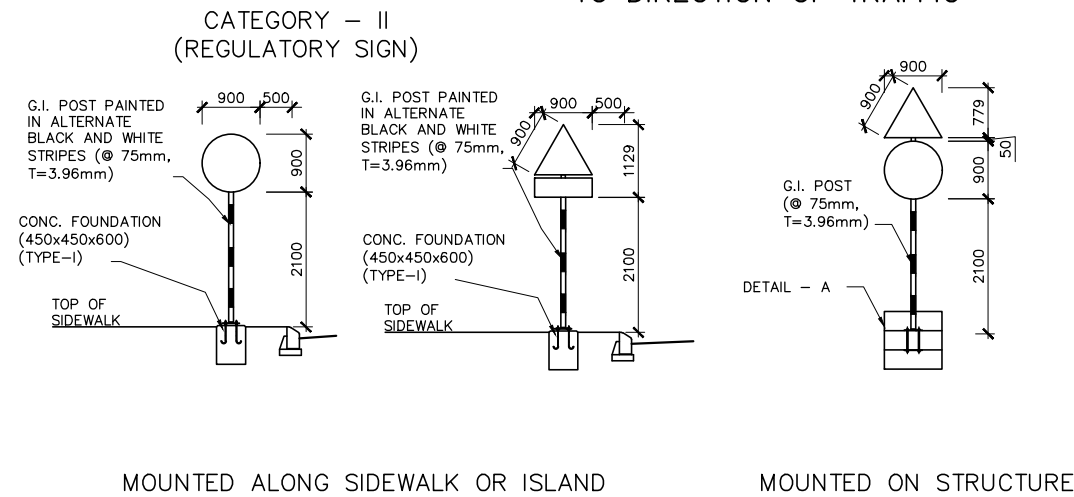
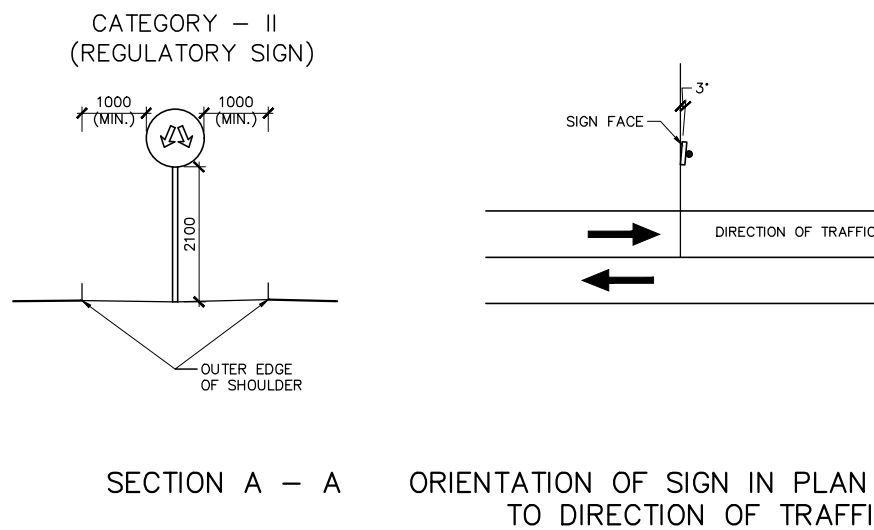
#### NOTES:

1. ALL DIMENSIONS ARE IN METERS [m] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).
4. SIGN SHALL COMPILE WITH LATEST NEPAL ROAD DESIGN STANDARD.

DRAFT STATUS:  
06.11.2018

Reference Drawings			
Drwg. No.		Title	
Revisions			
	Name	Date	Notes
<div><div></div><div>TAMAKOSHI V HYDROELECTRIC PROJECT PROJECT DEVELOPMENT DEPARTMENT ENGINEERING SERVICES DIRECTORATE NEPAL ELECTRICITY AUTHORITY</div></div>			
<div><div></div><div>LAHMEYER INTERNATIONAL</div></div>		CONSULTING ENGINEERS BAD VILBEL, GERMANY	
<b>TAMAKOSHI V HYDROELECTRIC PROJECT DETAILED ENGINEERING DESIGN</b>			
	Name	Date	DETAILED DESIGN
Prepared	B. Khadka	31.07.17	<b>PROJECT ROADS</b>
Drawn	B. Khadka		
Checked	Roloff		<b>ROAD DESIGN DETAILS</b>
Approved	Dr. Moeller		
Replaces Drwg. No: 31-00053-DD-4813-Y-0000_--			<b>TYPICAL ROAD SIGNS</b>
CAD- File No.:			
Scale A3: NOT IN SCALE			PROJECT DRAWING
Drwg. No.: 31-00053-DD-4813- Q 1853			REV. —

1. ALL DIMENSIONS ARE IN METERS [mm] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).
4. ROAD CONSTRUCTION AND DESIGN SHALL COMPILE WITH LATEST NATIONAL ROAD DESIGN STANDARD.
5. USE DIA. 75MM G. I. POST WITH 450X450X600 FOUNDATION (TYPE-I) FOR PROHIBITIVE, MANDATORY, WARNING AND SMALL INFORMATORY SIGNS. FOR LARGE SIGNS. USE 100MM DIA. POST WITH 600X600X1000MM CONCRETE POST FOUNDATION (TYPE-II) FOR SIGNS WITH FACE AREA LARGER THAN 2.5 SQ.M. USE 150MM DIA. POST WITH INSITU REINFORCED CONCRETE FOUNDATION (TYPE-III).
6. TWO SIGN PLATES MAX. MAY BE PLACED ON ONE POST ASSEMBLY.
7. A SIGN POST SHALL NOT BE MOUNTED IN THE MIDDLE OF SIDEWALK.
8. WIDTH OF CAST IN SITU CONCRETE FOUNDATION FOR LARGE SIGNS (TYPE-III) SHALL BE SAME AS THAT OF SIGN FACE, WHERE AS ITS BREADTH AND DEPTH SHALL BE 1.00M.



DRAFT STATUS:  
06.11.2018

Technical drawing of a G.I. post for a sign, showing dimensions and specifications.

**CATEGORY – III**  
**(INFORMATARY SIGN)**

**G.I. POST PAINTED IN ALTERNATE BLACK AND WHITE STRIPES**

© 100 FOR SMALLER THAN 2.5 sq m.  
© 150 FOR LARGER THAN 2.5 sq m.

**DETAIL – B**  
SEE DRAWING NO. RP G01-31



**PVC DUCT TO BE APPROVED FOR LIGHTING CABLE AS NECESSARY CONC. 20/25 50mm LEAN CONC.**

**USE 600x600x1000 PRECAST CONC. FOUNDATION (TYPE-II FOR SIGNS SMALLER THAN 2.5 sq m. FACE ARER.**

**12 DIA. © 150 TOP & BOTTOM BOTH DIRECTIONS**

**Dimensions:**

- W (Width of Sign Face)
- 1000 (Height of Foundation)
- 300 (Height of Post Section)
- 2100 (Along Sidewalk) / 1800 (Along Fill Slope) (Total Height)

Reference Drawings			
Drwg. No.		Title	
Revisions			
	Name	Date	Notes
 <b>TAMAKOSHI V HYDROELECTRIC PROJECT</b> PROJECT DEVELOPMENT DEPARTMENT ENGINEERING SERVICES DIRECTORATE NEPAL ELECTRICITY AUTHORITY			
 <b>LAHMEYER</b> INTERNATIONAL		CONSULTING ENGINEERS BAD VILBEL, GERMANY	
<b>TAMAKOSHI V HYDROELECTRIC PROJECT</b> <b>DETAILED ENGINEERING DESIGN</b>			
	Name	Date	DETAILED DESIGN <u>PROJECT ROADS</u> <u>ROAD DESIGN DETAILS</u> ROAD SIGN FOUNDATION  PROJECT DRAWING
Prepared	B. Khadka	31.07.17	
Drawn	B. Khadka		
Checked	Roloff		
Approved	Dr. Moeller		
Replaces Drwg. No: 31-00053-DD-4813-Y-0000_-			
CAD- File No.:			
Scale A3: NOT IN SCALE			Drwg. No.: 31-00053-DD-4813- <b>Q 1854</b>
			REV. —









- NOTES:**
1. ALL DIMENSIONS ARE IN METERS [mm] UNLESS OTHERWISE NOTED.
  2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
  3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).
  4. ROAD CONSTRUCTION AND DESIGN SHALL COMPILER WITH LATEST NEPAL ROAD DESIGN STANDARD.



DRAFT STATUS:  
06.11.2018

Reference Drawings				
Drwg. No.		Title		
Revisions				
	Name	Date	Notes	
 <b>TAMAKOSHI V HYDROELECTRIC PROJECT</b> PROJECT DEVELOPMENT DEPARTMENT ENGINEERING SERVICES DIRECTORATE NEPAL ELECTRICITY AUTHORITY				
 <b>LAHMEYER INTERNATIONAL</b>			<b>CONSULTING ENGINEERS</b> <b>BAD VILBEL, GERMANY</b>	
<b>TAMAKOSHI V HYDROELECTRIC PROJECT</b> <b>DETAILED ENGINEERING DESIGN</b>				
	Name	Date	DETAILED DESIGN  <u>PROJECT ROADS</u>  <u>ROAD DESIGN DETAILS</u>  GUARD RAILS TYPE 1 & 2  DETAILS PROJECT DRAWING	
Prepared	B. Khadka	31.07.17		
Drawn	B. Khadka			
Checked	Roloff			
Approved	Dr. Moeller			
Replaces Drwg. No: 31-00053-DD-4300-Y-0000_-				
<u>CAD- File No.:</u>				
Scale A3: NOT TO SCALE			Drwg. No.: 31-00053-DD-4813- <b>Q 1856</b>	
			REV.	



1. ALL DIMENSIONS ARE IN METERS [mm] UNLESS OTHERWISE NOTED.
2. ALL ELEVATIONS ARE ABOVE SEA LEVEL IN [masl].
3. CO-ORDINATES BASED ON NATIONAL GEODETIC NETWORK SYSTEM (EVEREST 1830).
4. ROAD CONSTRUCTION AND DESIGN SHALL COMPILER WITH LATEST NEPAL ROAD DESIGN STANDARD.

DRAFT STATUS:  
06.11.2018

Reference Drawings				
Drwg. No.		Title		
Revisions				
	Name	Date	Notes	
 <b>TAMAKOSHI V HYDROELECTRIC PROJECT</b> PROJECT DEVELOPMENT DEPARTMENT ENGINEERING SERVICES DIRECTORATE NEPAL ELECTRICITY AUTHORITY				
 <b>LAHMEYER INTERNATIONAL</b>			CONSULTING ENGINEERS BAD VILBEL, GERMANY	
<b>TAMAKOSHI V HYDROELECTRIC PROJECT</b> <b>DETAILED ENGINEERING DESIGN</b>				
	Name	Date	DETAILED DESIGN	
Prepared	B. Khadka	31.07.17	<u>PROJECT ROADS</u> <u>ROAD DESIGN DETAILS</u>  GUARD RAILS TYPE 3 DETAILS PROJECT DRAWING	
Drawn	B. Khadka			
Checked	Roloff			
Approved	Dr. Moeller			
Replaces Drwg. No: 31-00053-DD-4300-Y-0000_				
CAD- File No.:				
Scale A3: NOT TO SCALE			Drwg. No.: 31-00053-DD-4813- <b>Q 1857</b> REV. -	